

**Self-Leadership and Innovative Work Behavior
among IT Professionals: The role of Work
Engagement**

By

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Professionals: The role of Work Engagement**

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Candidate of Masters of Philosophy at the National University of Modern Languages hereby declare that the thesis "Self-Leadership and Innovative Work Behavior among IT professionals: The Role of Work Engagement" submitted by me in partial fulfillment of MPhil degree, is my original work, and has not been submitted or published earlier. I also solemnly declare that it shall not, in future, be submitted by me for obtaining any other degree from this or any other university or institution.

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ABSTRACT

Title: Self leadership and Innovative Work Behavior among IT professionals: The role of Work engagement.

The aim of this study was to examine the association between Self leadership and Innovative Work Behavior among IT professional in local context and to investigate the mediating role of Work Engagement in this relationship. The data were collected through convenient sampling technique from 300 male and female IT professional from different sectors and organizations of Khyber Pakhtoonkhwa. A cross-sectional research design was used to conduct the data of the present study. The English version of all the questionnaire were used to measure variables. Self-report measures of Abbreviated Self leadership Questionnaire by Houghton, Dawley and DiLiello (2012), Work Engagement Scale by De Jong and Den Hartog, (2008) and Innovative Work Behavior by Sahira Zaman (2006) were used to measure the variables of interest. For the present sample, the Alpha coefficient reliability of the test scores for these measures ranged from .70 to .79 that was in acceptable range and quite satisfactory. The findings of the study indicated that Self-leadership was significantly correlated with Innovative work behavior and Work engagement. Moreover, mediation models were tested to investigate the relationship between the Self-leadership and Innovative work behavior work using Work engagement and its three aspects as mediator. Using regression analysis, results suggested a significant change in the relationships after adding the mediators. The study provided evidences that Work engagement mediated the relationship between Self-leadership and Innovative Work Behavior.

Keywords: Self leadership, Work Engagement, Innovative Work Behavior, IT professionals.

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DEDICATION

Dedicated to my beloved Mom, my beloved late father and Humanity.

Introduction

Until now the main focus of leadership researchers and experts has on how a person leading a team or an organization and the person's relationship with their subordinates or followers. This strategy stresses a top-down straight up influenced associated procedure in which one leader has total control over, influence on and managed over all of their subordinates. And thus in the field of leadership it was a dominant standard for many years (Pearce and Conger, 2003).

According to some evolving approaches leadership is a type of activity which we can distribute and share amongst group members or amongst organization's members (Pearce and Conger, 2003), and about the informal leadership it reveals us (Fletcher and Kaufer, 2003) of organizations, in which individuals are enabled to take steps regarding responsibilities of them at work as well as the basis of this they also implement these decisions.(Conger and Kanungo, 1988).

Manz(1986) defined Self-leadership as an individual procedure to motivate yourself, control your behaviors, and lead yourself by means of some cognitive strategies and behavioral as a means to achieve individual and organizational goals (Manz, 1986). In recent times, for the organizations and also employees it comes to be very important that they should be capable of controlling, or managing, themselves. Because that the self-control systems of individual appear more effective since organizational control systems are insufficient to affect the behaviors of employees (Manz, 1986).

The Self-leadership, behavior focused managing techniques, as well as complete acquiring of intrinsic motivation's role is associated with Self Control of a person (Manz 1986). The Self leadership is also viewed as an activity that influences someone own beliefs or reasons to their influence. Regarding to this, self-leadership entails utilizing particular cognitive strategies as to control self-talk and mental imagery (pictures) (Neck and Manz 1992). Self-Leadership is a method that influences self-motivation and individual self-directing on

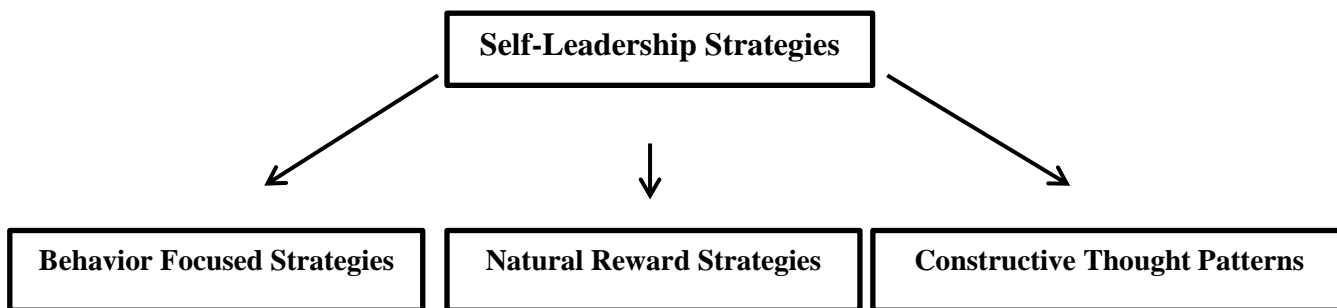
supplying the necessary behavior in the absence of an external influence (Houghton and Neck, 2002).

Self-leadership processes comprises self-effect of individuals by cognitive strategies. Self-leadership significantly affects ability of a person to regulate their personal thoughts and behaviour by concentrating (Neck and Manz, 1996) over the Self talk of someone, imagination, beliefs, thinking patterns, and expectations (Manz and Sims, 1980, Neck and Houghton, 2006, Manz, 1986,). The Self leadership is ability for someone to naturally control, influence, and steer their own behaviour toward their own task regarding self-motivating outcomes (Manz, 1986:589). The Self leadership is a far from Self-management. On the management the "what-why-how" method is always used and all workers ought to be viewed by means of knowledge workers (Pearce and Manz, 2005, Semerci et al., 2010).

Improving self-leadership abilities will boost personnel, which will improve administrative performance (Dogan & Sahin, 2008). The term Self leadership is the total of tactics which individuals might practice to stimulate and familiarize themselves through managing their behavior (Bakan, 2008). Effective management is correlated with one's capacity to lead and manage oneself throughout all stages for their leaders and managers. An employee will have the ability to achieve his greatest performance in this manner without outside influence or intervention. All employees, not only managers, require the capacity for self-leadership (Dogan and Sahin, 2008).

To shape their cognitions and behaviors Self leadership necessitates a procedure of self-influencing in which persons practice a certain type of specific strategies (e.g. Manz, 1986; Neck et al., 2020). These strategies fall primarily in three groups.

Self-leadership strategies are classified into behavior focused strategies, the second one is natural reward strategies and the third one is developing constructive thoughts patterns.



Behavior Focused Strategy

Behavior Focused strategy is intended toward the management and enhancement of behaviors required for the completion of tasks and it comprise self-observation of someone behavior prior to reforming it, Self-goal setting, Self-rewards, Self-cueing and feedback for one's own improvement (Neck et al., 2020). Behavior-focused strategies are more reliant on how people evaluate themselves, reward themselves, and exercise self-control (Tabak, Sigrun, and Türköz, 2013). Employers and managers can perform activities that are necessary but also challenging and unpleasant by using behavior-focused strategies. To attain personal excellence, these strategies are quite successful. Failure results in unwanted behavior. These strategies of self-leadership could motivate people toward taking actions that result in success (Houghton and Neck, 2002).

Self-monitoring, self-rewarding, goal-setting, clues strategies and self-punishment are comprises of behavior-focused strategies (Dogan and Sahin, 2008). Through self-observation, people can learn how to change themselves by looking at their own behaviors. Additionally, it might tell people about the reinforcement of simple things which results toward a desired behavior, as well as about the reappearance, time period of that desired behavior, and even if it actually happened or not.

Additionally, self-observation has advantages regarding self-assessment (Manz and Sims 2001). Employees who are going to put goals for themselves exhibit superior performance and produce additional advantageous outcomes for themselves as well as the organizations where

they are working. For that reason, this would be advantageous for the workers to be capable to set goals in terms to change their behavior (Tabak, Sr, and Türköz, 2013).

Self-rewarding involves rewarding oneself after finishing a challenging task at work in order to celebrate one's own success. This reward may be something concrete and material, as a great dinner out or a leisurely ship ride at noon time. With specific physical or spiritual rewards, we can boost our motivation and efficiency and support our efforts (Manz and Sims 2001). Self-punishment is the individual struggles to analyze their undesirable behaviors or performance failures, making the necessary corrections, and try to prevent mistakes from happening again. Overusing punishment has a negative impact on a person's out comes (Houghton and Neck, 2002). Clues, which mean to identify the cues for you and to repeat, or practicing a preferred behavior earlier engaging in it improves problem-solving and error avoidance. As a result, the outcomes benefit. Clues like to do lists and cue minutes are two examples of the external clues which are utilized to assist people focus and reach their goals (Doan & Ahin, 2008).

Natural Reward Strategies

Natural Reward Strategies assist people while concentrating over those aspects of a task or work which are, by nature encouraging, essentially satisfying, and delightful (Stewart et al., 2011). Boosting the feelings of competency, purpose and self-control, are being helped through these strategies. They involve changing one's environment to be extra naturally rewarding as well as focusing of someone's responsiveness on those components of a task or work that are naturally rewarding (Neck et al., 2020).

Natural-reward-strategies place a strong emphasis on response regarding a specific task or the enjoyment of an activity. If a person can demonstrate the pleasant aspects of a task or if they receive benefits from their task, they are exposed to natural or intrinsic rewards. Additionally, a person can improve their outcome through concentrating over the pleasurable aspects of their jobs (Houghton et al. 2002). This strategy differs from behavior-focused strategy in some important ways. When using natural reward strategy, rewards are given within the gratification and behaviors, those results through carrying out those particular manners lasts throughout the whole procedure. While in self-rewarding strategy people reward themselves after successfully completing a work or project (Tabak, Sr, and Türköz, 2013). Workers have to

observe those activities that they like performing as the intention of abstaining while performing the tasks which they do not like to get natural rewards from those actions and they have to concentrate over the aspects of those jobs that appeal to them (Doan & Ahin, 2008).

Developing Constructive Thinking Patterns

The goal of creating constructive thinking patterns is to alter the mental processes to the desired ones (Prussia et al. 1998). Constructive thought patterns emphasize the improvement of encouraging and productive thought patterns regarding a substitution for preexisting bad and flawed thought patterns. These strategies comprise positive self-talk, constructive mental conceptions of performance, illogical challenging and wrong views and presumptions (Houghton and Neck, 2002).

This assortment of Self leadership techniques comes together to provide a thorough and diverse practical self-influence procedure which improves person efficiency and outcome (Stewart et al., 2011). Just as people can change their behavioral patterns, they can also change their thought patterns. Managing one's own thinking patterns in order to boost one's own effectiveness is an individual's most crucial skill when it comes to thinking ways that are deemed as the foundation of self-leadership (Cirpan, 2014). In other words, to build constructive thought patterns of an individual refers to govern and manage one's own mental models.

Three sub-dimensions of developing constructive thought patterns include setting self-talking, aims, and evaluating one's specific ideas and thoughts (Tabak, A., Sıgı, Ü., & Türköz, T.(2013). The evaluation of beliefs and thinking could result in a multitude of performance issues because of the person's own disordered thoughts. This kind of circumstance develops as a result of dysfunctional presumptions and beliefs that are brought on by tough and stressful circumstances. People have the ability to recognize those unfavorable beliefs and presumptions and change them. Self-talk enables a person to eliminate their doubtful and negative self-talk and substitute these by additional upbeat ones via speaking toward her/himself in secret. Visualizing a popular performance, often known as mental imagery means the act of visualization a successful performance before the activity is finished. When using mental imagery, people are probable to perform successfully than they could otherwise (Uğurluoğlu, 2011).

Theoretical perspective

Self-leadership, according to one definition, is comprehensively self-influenced viewpoint which involves directing an individual towards execution of naturally inspiring activities and management of an individual as well for work execution which necessarily be performed but not naturally be inspiring and motivating" (Manz, 1986).

Self-leadership suggests that a variety of behavioral and rational Self influencing strategies may enable individuals to yield control of their own performance and inspiration. These strategies are learnt by understandings from classic Self-regulation and motivational theories like, cognitive evaluation theory (Deci, 1975, Manz, 1986, 2015; Neck & Houghton, 2006), control theory and self-regulation (Carver & Scheier, 1998), and social cognitive theory (Bandura, 1991). Self-leadership theory put forward that there are a variety of differences between Self leadership and Self-management (Manz, 1986; Stewart et al., 2011). Standards, objectives, values, and strategies (what needs to happen and why) are defined externally in self-management. The way a person motivates and directs them to accomplish these goals set by others depends on them. On the other hand, self-leadership entails intentionally considering what and why of conduct in addition to the issue of in what way to behave (Stewart et al., 2011). Self-leadership enables people to coordinate their actions with their own standards, interests and goals (Stewart et al., 2019; Manz, 1986, 2015).

Self-leadership theory is of that individuals are quite b, performance and their own motivation rather than passive byproducts of their social environment and personality attributes (Manz, 1986, 2015; Manz et al., 2016). People who take the initiative are thought to behave with self-determination and employ cognitive and behavioural self-influencing techniques (such as encouraging self-talk, setting goals, and self-observation). While being less reliant on outside instructions or control systems for maximum performance, they are more organically driven in their work (Manz, 2015; Stewart, Courtright, & Manz, 2019). Both for not-for-profit and for profit enterprises, self-leadership training programs has been shown to have benefit on health, performance, and self-efficacy in a number of intervention studies (e.g., Neck & Manz, 1996; Unsworth & Mason, 2012; Lucke & Furtner, 2015). Self-efficacy and conservation of resources theory (HobFoll, 1989) are the two key theoretical frameworks that inform these investigations (Neck & Manz, 1996).

The social cognitive theory has regularly been used to elucidate how and why Self leadership has an impact on a variety of results of interests (; Stewart et al., 2011 Bandura, 1986, 1991; Neck and Houghton, 2006). Social cognitive theory explicate that individuals are effected by triadic mutual system that have connections among internal processes, their actions outside of themselves, and their environment outside of themselves (Wood and Bandura, 1989).

This viewpoint contends that people's impressions of the outside world and their conduct in it can be influenced by internal cognitive processes. Moreover, social cognitive theory explains that people have command over their goals of performance which that have already designed for themselves (Neck and Houghton, 2006). As a result, people strive to overwhelm any complications that can stand in the way of their success. In other words, self-leadership enables people to better focus on the final result while minimizing reasons that might negatively affect performance. In particular, it is elucidated that a social cognitive theory is on other hand a behavioral modification theory that contends that people control their behavior by themselves (Stewart et al., 2011). Self-leadership offers particular plans and procedures to strengthen this self-control mechanism (Neck and Houghton, 2006).

Work Engagement

Work engagement has recently gained popularity among practitioners and scientists alike. An expanding corpus of study is starting to coalesce nearby a usual concept of the "work engagement," which denotes excessive degree of own interest in the professional activities done on the work. (Kahn, 1990; Macey & Schneder, 2008).

Additionally, work engagement refers to a more consistent focus on any particular thing, individual, incident, or behavior rather than a "momentary state, just like a feeling, or emotion" (Salanova & Schaufeli, 2008). Organizations want involved workers who are enthusiastic, committed, and immersed in his job, so researchers and professionals in various areas, which include business, psychology, development of an organization , management and development of human resource, have given employee work engagement a considerable agreement of focus. The essential line of any business benefits from employee work engagement that is reflected in the services that employees offer to consumers and clients (Aninkan & Oyewole, 2014). Employee work engagement specifically results in improved individual and/or group

performance. Additionally, loyal customers are produced by staffs who are motivated. As a result, satisfied customers spend more money with a business, increase its sales, and refer other potential customers to it. These actions boost a firm's profitability and, in turn, foster a more enduring work environment (Aninkan & Oyewole, 2014; Kim, Kolb & Kim, 2013; Bailey et al, 2015).

Work engagement is a significant employee result in and of itself, as well as a important analyst of behavioral results for employees. As a result, study discovered that enterprising and energetic learning and behavior (Sonnetag, 2003), as well as organization-focused organizational citizenship behavior (OCBO), all had favorable relationships with performance and work-engagement (Salanova, Agut, & Peiro, 2005). (Saks, 2006). Work-engagement is defined as "a positive, contented mental condition, marked by vigor, devotion, and immersion related to work" (Schaufeli et al., 2002).

Vigor

Vigor states as the degree of bounciness and energy of an individual that is especially obliging for sustaining a positive mindset during work (Salanova & Schaufeli, 2008). According to Shaufeli and Bakker (2004) employees who exhibit excessive degree of energy, bounciness, and preparedness to put forth strength in the workplace are referred to as vigor.

Dedication

Dedication involves in what way more interest, encouragement, and honor someone has to their work. Greater degree of devotion could permit people inspirational condition which isn't attentive to well recognize with their works (Salanova & Schaufeli, 2008). According to Shaufeli and Bakker, (2004), being dedicated is being invested in, having a sense of pride in, and feeling inspired or pushed by one's work.

Absorption

Absorption is the level at which individuals become immersed in their activity; at greater degrees, people may come to be very attracted by it that it becomes hard for them to disengage from it. (Salanova & Schaufeli, 2008). According to Shaufeli and Bakker (2004), Absorption is

described by being fully immersed with own work to the fact where the time is frequently go by swiftly and individual finds it difficult to step away from it is referred to as absorption.

There is a common understanding that the three factors of vigor, dedication, and absorption should be considered in a thorough evaluation of work engagement (Demerouti, Mostert, & Bakker, 2010; Gillet et al., 2017). Further than this acknowledgement, it is suggested that employees could sense work engagement in a very comprehensive way, with a distinct predominant work engagement facet that combines components of vigor, absorption and dedication (Schaufeli et al., 2017). This all-encompassing strategy appears to be supported by strong relationships between assessments of vigor, devotion, and absorption (Gillet et al., 2013; Siu et al., 2014), as does the finding that a higher order illustration of engagement at work tends to have stronger relationships with antecedents and outcomes than any of its components (Siu et al., 2014). Although, new data too imply that the various aspects of the engagement at work are conceptually significant, distinct and exhibit forms of relationships with a range of outer factors (Gillet et al., 2017; Reis et al., 2017).) These findings bring up several theoretically important queries, such as (a) If the aspects of vigor, absorption, and dedication actually hold on to significant particularly above also beyond the evaluation of the main paradigm of the engagement of work, and (b) even if the latter survives like a worldwide body that includes the particularity diagramed through the features, or as an alternative, consider even if these aspects show several connected magnitudes devoid of that common element. (Morin et al., 2017).

Study focused on the underlying structure of work engagement has mostly used the confirmatory factor analytic technique (e.g., Costa et al., 2014; Engelbrecht et al., 2017; Schaufeli et al., 2018). Whenever the objective is to perform a thorough analysis of the essential dimensions of a multifaceted mental (psychological) concept like job engagement, however, confirmatory factor analytic comes with significant limitations that make it useful. Fortunately, more variable- and person-centered methods are available to allow a deeper examination of the particular critically essential question (e.g., Mäkikangas et al., 2013).

It has contend that employing affected strategies of self-influence of the self-leadership might enable staff members to modify their views of their job environments and linked actions just like that help them become more energized, committed, and engrossed in their job. The sample is, structuring job responsibilities by that they makes them extra natural gratifying have

to boost absorption, dedication and vigor on the task at the ready. Similar to this, practicing inner constructive thinking techniques, like positive outcomes of visualization and self-talk similarly accelerate to better enthusiasm and engagement at work.

The self-investment regarding personal resources in work is what is meant by work engagement. In other words, engagement exemplifies a shared quality of the mental, emotional, and physical resources that people carry to their jobs (Rich et al., 2010). Concerning about, engagement at work is not limited to investing one area of the self but more than of this it denotes the asset of several scopes (cognitive, emotional and physical) that create a concurrent and all-encompassing skill (Kahn, 1992; Rich et al., 2010). People who are thus participate in their work and have a connection to it on several levels. Like we already defined it, engagement concentrates over the task or work that is done during a job and denotes preparedness for devoting one's mental, emotional and physical capitals for that task. A person, who is involved, is whom, which pursues the activities related to a work with a of self-investment's sense, desire and enthusiasm, which should transfer into greater ranks of performance both in roles and outside of roles. (Kahn, 1990). Important individual and organizational outcomes are correlated with work engagement (e.g. worker fitness and comfort, out comes).

Work engagement measures a person's level of commitment to the job completed and is characterized through the measurements of, absorption, vigor and dedication (Schaufeli et al., 2002). The engagement at work is a key performance indicator that helps employees to achieve high-quality results even in demanding work conditions (Kahn, 1990). Employees that are highly engaged at work have high levels of devotion (vigor), look important also relevant (devotion), and put additional effort into their job (Bakker et al., 2008). According to Ouwenel et al. (2012), engagement at work is linked to employing personal resources and includes traits of dynamic well-being. It has also been shown to be related to work outcomes for both personnel and businesses (Bakker and Albrecht, 2018).

According to Gonzalez-Romá, Schaufeli, Bakker, and Lloret (2006), "engagement at work is a multifaceted conception as they characterized it as a happy, contented mental condition that is related with work and is described by vigour, devotion, and absorption. Work engagement is marked as putting a lot of vigor into someone's work and is necessary as devoted workers sense stisfaction and motivation (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007).

The Engagement at work is an affecting motivating concept linked to employee's perseverance also strength in carrying out their duties (Schaufeli et al., 2006, Ugwu and Ike, 2020). Employees that are engaged would additional productive and thus they are extra attentive and concentrated in the jobs they are doing (Christian, Garza, & Slaughter, 2011).

Engaged workers have a sense to feel upbeat and inspired to participate in actions which advantage the organizations (Mathieu, Eschleman, & Cheng, 2019). Employees who are individually invested in their jobs put more effort into it and have a broader perspective on it. Because of this, they often go above and above what is necessary of them (Christian et al., 2011). As a result, which may put forth extra effort out there what is necessary of them Christian et al., 2011).

According to Kahn definition, the unique character of work engagement in several jobs, terminology like "worker engagement," "work engagement," and "role engagement" have been used to characterize it (Rich et al., 2010; Rothbard, 2001; Saks, 2006). Amongst many words for engagement, employee engagement and work engagement are two that are commonly and sporadically used as a substitution in the literature. Work engagement, concentrates upon the interaction in a worker and their duty whereas on the other hand, Employee engagement, is talk about the interactions among the person and the job as well as concerning the worker and the institution. (Schaufeli and Bakker, 2010).

Along with the more laden ideas of work stress and tiredness, the term "work engagement" was in recent times presented to illustrate the beneficial effects of the job on one's lifestyle quality (Taipale et. al, 2011). Over the past twenty years, research on work engagement has become more and more prominent (Burke et. al, 2009). High participation, affecting vitality, and self-presence during job are the three main components of the wide idea of the engagement at work (Sonnentag et. al, 2008).

According to Shimazu (2009), work engagement is an optimistic, satisfying, condition of thoughts related to work which is enthusiastic (vigor), committed (dedication), and absorbed (absorption). Vigor is described by mental bounciness and great degrees of energy during work. Dedication is when a person is busy in an activity and experiencing a feeling of worth, excitement and challenge. Absorption is totally absorbed and enjoying someone's work like the

time goes swiftly and it is impossible to separate oneself from it. Simply said, motivated people are excited about their effort and have great degrees of vitality. Furthermore, they are frequently completely absorbed in their job thus that time pass quickly (Shimazu & Schaufeli, 2009; Bakker & Demerouti, 2008).

The congruence between worker priorities and the organizational goals are depending on the employees are engagement with their work. There are signs that job performance and the level of work engagement are positively correlated (Tomic & Tomic, 2010). A model named demands-resources model, says that the development of the engagement at work is greatly affected by resources at job which are states to social, physical and organizational facets of a work which are useful in achieving in the goals related to work, job demands reduction, and also offering chances intended for individual development and knowledge (Lange et. al, 2008).

Those Workers which are involved feel strengthened and associated to their labor doings, also they have faith in they are fully accomplished of management the errands of their job (Babcock-Roberson and Strickland, 2010). Previous research demonstrates that engagement has a number of advantageous effects, including dedication to an organization improved duty presentation, inventiveness and advanced behavior. According to certain qualitative researches that work features including load of their job, prize, control, fair-mindedness, municipal and morals have an effect on workplace commitment (Jenaro et. al, 2010)

Innovative Work Behavior

Organizations now find it very challenging to successfully compete in the modern business world due to changes in basic legislation, technology improvements, and global rivalry. Therefore, in today's market-oriented economy, ongoing innovation is a key element of organizational survival. To boost their workers' innovative work behavior, most of the organizations are interested in researching all the aspects (Agarwal, 2014; Scott & Bruce, 1994). Creativity is no longer a novel idea in the literature, but only a small percentage of it is focused on the organizational characteristics that drive innovation in the business (Chandler, Keller, & Lyon, 2000).

As further, innovative behavior in the workplace is a three stage process which is thought to be sophisticated activity (Scott and Bruce, 1994). Innovative behavior fist begins when a

person come up with an adopted and unique idea with a proper solution, gain support and acceptance from both inside and beyond the organization, after the identification of the problem. Through making such a model of the innovation which can be practiced, executed, and employed within a work role, a group, or the organization completely, someone who determines innovative behavior attains the idea or resolution at the end of the innovative procedure (Kanter, 1988; Carmeli et al., 2006).

A number of studies primarily focus on idea generation which is a stage of innovation though the practical implementation of ideas is also part of innovation (Mumford, 2000; McAdam & McClelland, 2002). It is also suggested that employees of organizations, via their inventive behaviors and application of the ideas, help establish and shape work situations that lead to organizational innovation (Amabile, 1998). Therefore, under this definition, "innovative behavior" is defined as behavior that promotes the establishment and usage of new and pragmatic concepts, empirical ideas, practical processes, actual products, or methods inside a work function, group or organization (Farr & Ford, 1990). Therefore, it is possible to think of inventive behavior as a multidimensional approach that covers all those behaviors which give free hand to the employees to participate in the process of innovation.

Innovative Work Behavior is typically framed in the perspective of how people might accomplish start and purposeful explanation of novel and helpful pragmatic ideas, products, procedures, or processes (Farr & Ford, 1990). Innovative work behavior is viewed as a suitable multi-stage process comprising idea development, coalition building, and application because the introduction of fresh and helpful viewpoints rarely follows a straight connection (Scott and Bruce, 1994). The viewpoint offers a revised understanding of innovative work behavior which was framed on a one-dimensional model, formerly (Janssen, 2000), a two-dimensional model was put forward by Krause (2004) and Dorenbosch et al. (2005), and a three-dimensional model presented by Reuvers et al (2008).

Initiation and implementation are the two primary stages that innovation theorists frequently use to define the innovation process (Axtell, Wall, Unsworth, Waterson, Harrington, & Holman, 2000). It is thought that the separation between the two phases marks the beginning of the idea's adoption, or the moment when the choice to set the invention into practice. The first

step is concluded with the creation of a concept, and the implementation of the idea concludes the second stage (King & Anderson, 2002).

The use of Innovative Work Behavior is encouraging and executing a valuable innovation (West & Farr, 1990). It contains the development of novel ideas and their application by people, groups, or the entire organization, (Kor, 2015). Because of Innovative Work Behavior, the employee creates a discretionary additional effort to develop and execute all individual activities within the organization towards the development of novel ideas, their processes and their procedures, and products (Yuan & Woodman, 2010). There are some dimensions that are identified by Scott and Bruce (1994): (a) realizing opportunities associated with the issue (idea exploration), (b) coming up with specific ideas for the problem's solution, (c) getting support for strengthening of these ideas (idea championing), and (d) idea execution.

Innovative work behavior gives workers the ability to successfully complete the complex and challenging tasks which require significant efforts. According to the studies of Yuan and Woodman (2010), the concrete examples of Innovative Work Behavior are exploring advanced technologies, defining new objectives, creating new ideas and creating new strategies. Additionally, Innovative work behavior helps workers better manage work-related stress or tension (Janssen, 2000).

The internal and external elements that effect directly or indirectly the Innovative Work Behavior contain demographic features, market situations, worker characteristics, a lack of innovative knowledge as well as demands for goods and services, production costs, and newly introduced products (Li & Zheng, 2014). These external and internal issues should be taken into account by the leaders of the firms while examining the Innovative Work Behavior.

In some studies innovativeness was identified as an important factor in enabling organizations and has a crucial role in the maintenance of good benefit upon their opponents as well as an important aspect in the long term success and survival of the business (Birkinshaw, et al., 2008; Janssen et al., 2004). Numerous studies (such as those by West and Farr (1989), Janssen (2000) and Abstein and Spieth (2014), came to the conclusion that, in such a fast-growing corporate world, the essential asset for organizational success is employee embedded in the innovative work behavior. Not only for innovation-focused jobs and organization but the

entire organizational workforce, employee Innovative Work Behavior plays a very important role (Mumford, 2003; Jong & Hertzog, 2010).

The acts that people take on their own initiative with the purpose of making new situations or enhancing the current ones for themselves and organization are the focus of Innovative work behaviour (Griffin et al., 2007; Parker & Collins, 2010). For maintaining organizational competitive advantage, experts also stress on the importance of employee Innovative work behaviour (e.g. Bruce, 1994; Yuan, Janssen et al., 2004; Scott & Woodman, 2010).

Even though an organization's competitiveness is based on innovation but still no organization can succeed without its employees (Janssen et al., 2004 and Agarwal, 2014). However, the literature currently pays little, if any, attention to how relational leadership affects employees' IWB but its vitality for organization has been cited in the studies (Mumford, 2003), Agarwal, Datta, Beard, & Bhargava, 2012). It is important to understand that what promotes or supports employees' behavior because innovative conduct among the employees is the cornerstone of fabulous performance in the organization (Scott & Bruce, 1994).

Some individual traits, such as leadership, roles that foster innovation, or opposition to change inside the organization, do have an impact on the components that determine organizational innovation (Noor & Dzulkifli, 2013). Given its prominence in the workplace, leadership has been found to have an impact on employee behavior and influencing their organizational activities. Most significantly, it has been discovered that transformational leadership has a significant impact over workers' Innovative Work Behavior (e.g. Kahai et al., 2003; Tsai & Tseng, 2010).

Employee Innovative Work Behavior contains three stages: generation of idea, promotion of idea, and realization of the idea. The first stage, the idea generating stage, may include the steps that were reserved to increase new facilities, products, or organizational dealings. The idea promotion stage really gives the generated ideas more strength and moves them further from organizational hurdles (Shane, 1994). The important considerations of this stage are seeking more organizational support and developing good partnership (King & Anderson, 2002). Finally, the third stage, the idea realization stage, is where ideas are established and promoted into

reality. At this stage, specific activities like the creation of new goods or facilities or working techniques should be highlighted (West & Farr, 1990).

According to Scott and Bruce (1994), the above stages of employee Innovative Work Behavior happen in sequential manner. These stages allow individuals to engage a mixture of these various behaviors or any of them at specific time. When an individual develops new ideas about the existing challenges related to work, he will have to obtain the upkeep of idea promotion for the implementation of those ideas. Furthermore, for completing and performing the entire process of work innovation an individual must realize new ideas through the implementation of them in his/her work role, group, or the entire organization (Van der Vegt, & Janssen, 2003).

Recent research has looked at how Innovative work behavior—comprises of four interconnected groups of behavioral task—including as problem detection, idea development, idea elevation, and concept understanding, might help employees be more innovative (Jong, & Hartog, 2010). Problem identification and idea generation which are the first two stages represent the stage of work behavior that is more focused on creativity. The final two tasks are categorized as implementation-oriented work behavior since they include persons attempting to spread a unique conception to potential coworkers and administrators, and also to actualize ideas that are later functional within the work position, group, or overall organization. According to studies, people who are innovative are able to contribute in ways that go above and beyond the call of duty while also realizing a constant stream of inventions (Parker, Williams & Turner, 2006). Innovative behavior Innovation refers to an action that aims to generate, carry out, respond to, and alter ideas, and it stresses a more complicated process (Van de Ven, 1986). Similar to this, it is underlined that the real definition of innovation should be the development and employment of novel ideas along with the deliberate process of producing new ideas for the enhancement of the performance of an organization (e.g. Kanter, 1988; West & Farr, 1989; Scott & Bruce, 1994; Janssen et al., 2006).

Innovative work behavior as explained by De Jong (2006) in his research is the individuals' actions for introducing and commencing of novel ideas, helpful processes and goods, or methods within the work role, group or organization. The development, dissemination

and employment of new ideas with the intention of enhancing organizational performance is quite complicated process (Janssen 2000, 2005).

Innovative work behavior generally entails identifying issues with current working procedures, unmet needs of individuals, or signs that a trend may be changing and coming up with fresh solutions, approaching the issue in novel ways, and sharing knowledge with others (e.g., Woodman et al. 1993; Jong, & Hartog, 2007). On the other hand, creativity, that involves more than only the creation of novel ideas that primarily consists of the production, promotion, and application of novel ideas, Therefore, in respect to thrive and advance in the more chaotic and complex environment, business organizations are making an effort to improve the workers' Innovative Work Behaviors (Woodman et al. 1993). According to the previous studies that leadership and organizational environment seem to be full of smooth communication, psychologically empowering and supportive which were positively related to Innovative work behavior (Martins & Terblanche 2003; James et al. 2008).

Self-Leadership and Work Engagement

Using the Social Cognitive Theory as a theoretical frame we propose that greater degree of Self leadership is associated with greater degree of Work Engagement. According to the triadic mutual system of Social Cognitive Theory, internal cognitive processes can affect how people perceive their surroundings and their actions (Wood & Bandura, 1989). We contend that implementing internalized Self-influence Self leadership Strategies might enable staff members to modify their views of their work environments and allied behaviors in some ways that support them in developing more vigor, dedication, and absorption in their work. For instance, structuring tasks at work in a way that makes them more Naturally Rewarding must move to increase vigor, dedication, and absorption on the task at the ready. Similar to this, using internal constructive thought strategy like positive visualizations and positive Self talk of outcome must increase enthusiasm and Work Engagement.

A small figure of earlier researches has provided additional verifiable proof in favor of a fundamentally favorable direct association between Work Engagement and Self leadership. To be able to examine the role of Work Engagement as a mediator between Innovation and Self-leadership, Gomes et al. (2015) studied a sample of 337 doctors and nurses and found evidence

to support the relation between Self leadership and Work Engagement. Additionally, validating the link between Self-leadership and Work Engagement among a sample of Korean business workers, Park et al. (2016) investigated the part of Self Leadership as a bridge between Job engagement and organizational justice. In a related study, (van Dorssen-Boog et al., 2020) it was found that in sample from two healthcare organizations with a total of 337 participants, Self-leadership moderated the impact of job autonomy on health and Work engagement. Last but not least, research has demonstrated a connection between psychological capital, a cognitive resource associated with self-leadership (e.g., Kotze, 2018), and Work engagement (e.g., Joo et al., 2016).

Indeed, several studies (e.g., Amundsen & Martinsen, 2015; Zeijen, Peeters, & Hakanen, 2018; Breevaart et al., 2014) have observed that Self Leadership and Work Engagement are positively correlated, either by improving job resources (Breevaart et al., 2014) or by utilizing psychological resources like psychological empowerment (Amundsen & Martinsen, 2015). Additionally, it is believed that engaging in meaningful work revitalizes individuals and has an impact on health. Due of their tremendous levels of energy from daily activities and true autonomous motivation, engaged people experience longer-term increases in well-being and physical health (Reis, Hoppe, & Schroder, 2015; Ryan & Deci, 2008; Weinstein & Ryan, 2011).

Self-leadership and Innovative Work Behavior

Self-leadership and successful job outcomes are positively associated, according to a growing body of research. Innovation in the workplace is a complicated process that frequently involves challenges, hurdles, and frustration. It involves finding difficulties, come with fresh ideas and solutions, recruiting supporters, and developing useful, usable models (Scott & Bruce, 1994). The innovative person not only deals with a tough environment where significant hard work is needed to finish the entire innovation process, but he or she also could encounter opposition to their activities. This is thus for the reason that individuals often want permanency and detest the unpredictability and insecurity changes brought on by innovation entail. According to recent studies, organizational justice and fairness are crucial for lowering employee stress when they are faced with challenging conditions (Janssen, 2004; Tepper, 2001).

Employees can lead themselves through the process of self-leadership to attain desired behaviours and goals. The lack of Self-Navigation, a crucial component of the idea of the Self leadership, prevents certain people from engaging in innovative behavior even while they are motivated to complete tasks (Latham and Locke, 1991). Greater degrees of Self Direction and self-motivation are skills that people with good self-leadership abilities possess (Houghton et al., Manz & Neck, 1999, 2003; Manz, 1986;). Individuals develop their leadership skills during this process. For instance, prior to the first step of the process of Innovation, which involves identifying a difficulty and coming up with new ideas and solutions, constructive thought patterns become essential. As opposed to dysfunctional thought patterns, constructive thoughts enable a people to address an issue and provide suggestions for solutions more successfully.

The employment of the Strategies of Self Leadership is a favorable precursor of innovation and creativeness (DiLillo and Houghton, 2006; Neck & Houghton, 2006). Whenever workers are capable of inspiring themselves to greater degrees of productivity and performance (Manz, 1986), making decisions, describing and resolving glitches, and classifying chances and difficulties all serve as facilitators for creativeness (Pearce & Manz, 2005), which in turn promotes innovation .(Hammond et al., 2011). An emergent amount of research has recently demonstrated that Self Leadership has a positive impact on individuals' Innovative work behaviour (Carmeli et al., 2006; Pratoon & Savatsomboon, 2010; Kalyar et al., 2011; DiLiello & Houghton, 2006, Curral & Marques-Quinteiro, 2009).

Work-Engagement and Innovative Work Behaviour

For businesses and nations to be competitive is to innovate (Van Hootegem, 2012). The employees of the organizations are a crucial component of every innovation process. They provide ideas, are in charge of putting them into practice, or, if they're not satisfied, they might make attempts at innovation ineffective. According to several studies of revolution managing (Janssen, 2000; Oldam & Cumings, 1996; Robinson & Schroeder, 2004; Terikngas & Valikngas, 2012), an engaged and innovative workforce is a valuable asset. As a result, educational interest is concentrated on how to encourage workers to be inventive and involved in their work (De Spigelare, Van Gys, & Van Hote gem, 2014).

Organizations demand workers who go above and beyond the proper work necessities to involve in innovative work behaviors to address issues including ecological uncertainty and universal rivalry (Janssen, 2000). The behavior regarding innovativeness in work is the deliberate growth, dissemination, and implementation of fresh concepts inside a job role, a group, or company or institute to enhance the outcome of that role, group, or company or institute (West & Far, 1989). Social scientists and practitioners continue to be intrigued by the crucial role that innovation plays in success sustaining for a long term (Ancona & Caldwell, 1987).

The study of work involvement as a precursor of innovativeness has, however, received little attention (Hakanen et al., 2008). According to West and Farr (1989), organizations regularly introduce innovations to offer benefits, but employing innovations imposes a significant effort from workers. Worker attention and absorption in their work are essential for Innovative Behaviors as they entail the invention of something novel (absorption). Innovation is too change-focused. (Spreitzer, 1995; Woodman et al., 1993). Changes may be resisted by other workers because of the uncertainty and insecurity they bring (Argyris, 1960). As a result, workers who seek to resist change frequently confront inventive coworkers. It can be challenging and emotionally taxing to convince resilient employees of the advantages of the innovations. The creation of new concepts, elevation of concepts, and awareness of ideas are all phases of the innovation method, and different behaviors are essential at every phase.

Employees must therefore hold the mental toughness to withstand the attraction to take time off from their employment (vigor). For people to regularly devote such mental and emotional energy to their work, they need to feel significant and proud of what they are doing. They must also think that the additional work is worthwhile. People can only give their work their whole attention (dedication) when they are really passionate about it. The three main components of the engagement at work are absorption (to be intensely focused and absorbed in one's duty), vigor (having great degrees of vitality and fortitude of mind, as well as tenacity despite the form of difficulties), and dedication (having an idea of amiability, importance, and difficulties in responsibilities). Work Engagement, a long-lasting favorable emotional and cognitive state marked via vigor, dedication, and absorption (Wefald & Downy, 2009b), helps in the emergence of Innovative Work Behavior. Innovativeness and the three characteristics of job

engagement were found to have a positive correlation by Bakker et al. in 2007. Self-leadership, work engagement, and individual innovation research on a personal level demonstrate that better affective responses are correlated with higher levels of Self leadership (Stewart et al., 2011).

The theory of positive emotions named “broaden-and-build theory” (Fredrickson, 2001) contends which experiencing positive feelings will increase one's willingness to take part, attempt to novel things, and explore. These will then encourage original thinking, creative solutions, and top performance. Furthermore, Hakanen et al. (2008) shown that when workers are emotionally and motivationally fulfilled at work, a state known as work engagement, they consistently improve their work through creative actions.

Despite the fact that employee creativity and innovative work behavior are commonly misunderstood, together these are separate concepts (De Spiegelare et al., 2016). Workers creativeness is related to the development of new and distinctive ideas (Amabile, 1988). Alternatively, "all workers conduct relevant to several stages of the invention method" is what is meant by "innovative work behaviour" (De Spiegelare et al., 2016). Second, while innovation usually entails the production of anything entirely new, it might also just involve copying relatable, productive work behavior from other areas (De Spiegelare et al., 2016). We explicitly accentuate internal motivation, even though many other theories have been put forth to describe innovative work behaviour with engagement (Devlooo, Anseel, De Beuckelar, & Salanova, 2015, De Spiegelare et al., 2016; Jelen Sanchez, 2017).

Past research on the topic has established that Work-Engagement is a unique psychological concept that is linked to a variety of positive outcomes, including profit/benefit (Harterr, Hayes & Schmidtt, 2002), individual initiative (Hakanen, Toppianen-Tanner & Perhoniemi, 2008), extra-role dedication (Bakker, Demerouti, & Verbekee 2004), happier workers (Ilkhanizadeeh & Karatepee, 2017), improved performance at work (Huhtala & Parzefall, 2007), and precisely Innovative Work Behavior (Hakanen et al., 2008; Huhtala & Parzefall, 2007). In reality, the Innovative Work Behavior is preceded by Work Engagement. Additionally, the personal efforts and extracurricular activities, which are strongly linked to work engagement, encourage employees to take initiative and feel good about their everyday work (Bakker & Demerouti, 2008). People learn new information and advance their professional skills as a result of the positive effects and proactive behavior brought on by the inherent

intrinsic motivation connected with corporate social responsibility projects (Fredrickson, 2001). According to Isen (2001), Employees that experience psychologically good affect have "a varied set of thought," which allows them to understand issues more holistically and broadly, eventually leading to resolutions that had not previously occurred to them. This proposes that positively affecting on work supports develop Problem-Solving and innovative work behavior amongst workforces. This study contends that because of greater engagement at work (as seen via the prism of self-determination theory), workers aren't only greatly enthused by corporate social responsibility work but also engage in activities with excellent inventive potential and results (Bakker & Xanthopoulou, 2013).

A study was conducted to investigate that how self-leadership, different level resources, affect workers' innovative work behavior. Additionally, it was examined how informal learning, another resource at the individual level, may mediate this link, as well as how social capital, a social resource, could moderate the mediation. The findings showed that informal learning served as a mediator between Self leadership and workers' innovative behaviour. The favorable mediation impact of casual knowledge was amplified by social capital. The study experimentally validates the relevance of Self leadership, social capital and informal learning as the predictors of innovative behaviour, expanding the debate on leadership by emphasizing the value of self-leadership as divergent to conventional leadership techniques. (Kang, Song, & Li, 2022).

In another study a framework for individual invention, including creativity and self-leadership as its precursors, were constructed and evaluated. 180 participantss were surveyed in 10 Pakistani manufacturer businesses. The findings demonstrated a solid direct relationship between creativity and self-leadership and individual innovation (Kalyar, 2011).

To investigate the effect of Self leadership on worker creativity and workplace creative orientation a study was conducted that investigated the part of Self leadership in relation to worker creativity, the climate for creativity, and workplace novelty readiness. The outcomes of the study validated the importance of the associations between Self leadership, worker creativity, the atmosphere for creativity, and workplace innovation. Curral et al., (2009), examined the association between self-leadership, intrinsic motivation, goal alignment and innovative behaviour. They proposed that the abilities ;self-leadership serve as a mediator between goal orientation and role innovation likewise between intrinsic motivation and role innovation since

innovation necessitates self-navigation competencies. In order to learn more about this, 108 workers from the three different businesses who work on the improvement and execution of technological resolutions were polled about their beliefs about goal alignment, their level of intrinsic motivation, their Self leadership techniques, and how often they implement new work practices. For learning goal orientation and intrinsic motivation, findings revealed a favorable association with role innovation, but not for performance goal orientation. The association between learning goal alignment and role innovation was totally mediated by Self leadership abilities, but the relation amid intrinsic motivation and role innovation was only somewhat mediated. Therefore, improving employees' self-navigation skills may be a way to improve their innovative behavior

To examine the effects of workplace flexibility on employees' intentions to leave their jobs and their use of innovative work practices, also the mediating effects of work-growth balance and perceived organizational support was carried out by Chung, Yang and Park, (2013). The study also looked at self-leadership as a mediating variable in the link between work-life balance, perceived organizational support, and workplace flexibility. The findings from 182 participants showed that (a) work-growth balance and perceived organizational support were positively correlated with workplace flexibility, (b) turnover intention and innovative work behaviour were negatively correlated with work-growth balance and perceived organizational support, and (c) the association between workplace flexibility and desire to leave the company was mediated by work-growth balance and perceived organizational support. The study found that the association between perceived organizational support, workplace flexibility, and work-growth balance was mediated by self-leadership.

By examining the connection between individual task performance and group member competence, adaptability, and proactivity, Hauschildt and Konrad (2012) findings show a strong correlation between self-leadership and competence, adaptability, and proactive behaviour both at the individual task along with the group and the collectivism also mitigated the relation in team member competency and Self-leadership.

A study in corporate organization in Malaysia investigated at how employee innovative work behaviour and self-leadership qualities relate to one another in a middle level personnel. The results seemed to confirm two hypothesis that behavior-focused and natural incentive

systems have a favorable relationship with employees' creative work behaviour. The results showed that two aspects of Self leadership skills help workers to be more creative in how they conduct their jobs (Saud, et al. 2018).

A study was conducted to focus on the variables affecting academics' self-leadership, innovative behaviour, self-efficacy, and work satisfaction in COVID-19. Studying the motivational elements that affect academics and improve their performance during COVID-19 is also beneficial. There were a total of 100 responders from an institution. The study findings support the idea that Self-leadership abilities might encourage creative behavior at work in response to the COVID-19 problem. (Banerjee, 2021).

Researchers looked at how self-efficacy mediated the links among self-leadership, knowledge sharing, and innovative work behavior. An effort was made to provide in-depth visions on the variables that affect innovative work behaviour in higher educational institutes amongst different academies in Malaysia. The study's findings revealed that Self efficacy acted like intermediary in the association between information sharing and creative behavior i.e. self-efficacy mediates the link between information sharing and innovative activity (Ibus, & Ismail, 2018).

Study was intended to examine that how relational leadership by supervisors affects the environments that inspire workers to involve in creative work behavior. The psychological contract construct is specifically taken into account in this study as the mediating variable, presumptuous that social interaction between workers and the organization impacts their conclusion to engage in creative behaviours. The study included 237 immigrants from a Korean company. To track changes over time, questions were administered to the same individual twice. The findings demonstrated a favorable correlation between workers' success in novel work behaviours and their perceptions of their supervisors' relationship leadership with time. This association was partially mediated by a person's impression of worker commitments, suggesting that a sense of responsibility to the company may be a prerequisite for creative work behaviours (Kim, 2022).

For organizations, including Higher Education Institutions, achieving long-term survival and sustainability requires innovative work behaviour. Self-leadership and information sharing

are major predictors of creative work behavior. Ibus (2021) examined how academics' creative work behaviours are affected by self-leadership and sharing of information and also explored the function of Self efficacy as a mediator between the links amongst Self leadership and sharing of information and innovative work behaviour. The findings demonstrated that Self leadership, sharing of knowledge and self-efficacy are all beneficial and have a large influence on innovative work behaviour. Self-efficacy, nonetheless, mediates the connection in self-leadership and information sharing in the direction of innovative work behaviour.

Research was focusing on Self-leadership affecting as a mediator in the banking area over perceived entrepreneurial orientation and Innovative work behavior. By studying the Self leadership's mediating role in the link between perceived entrepreneurial orientation and innovative work behavior this research extends the body of information on innovative work behaviour. A survey of 404 banking workers was examined using structural equation modelling. The results of the reliability tests and the confirmatory factor analysis firmly back up the study's size. According to the findings of an empirical survey research conducted at deposit banks, participants' opinions of high degrees of entrepreneurial orientation positively influenced their willingness to take risks at work. The findings also provide credence to the idea that self-leadership plays a complete mediating role in the association between participants' judgments of an entrepreneurial orientation and innovative job behaviour. Moreover, the given work offers certain recommendations for the professionals of banking industry to encourage creative work behaviour by self-leadership and an entrepreneurial mindset (Kör, 2016).

Another research which aimed to look at the direct effect of learning organizations on Innovative Work Behaviors also looks at how Self leadership affects the relationship between creative self-efficacy and innovative work behaviour. The data collecting survey was voluntary and conducted in an unstructured environment with a total of 487 permanent employees from the manufacturing sector. This study results show that learning organizations can anticipate workers' creative work behaviours. This study findings also show that the relationship between learning organizations and innovative work behaviours is somewhat mediated by creative self-efficacy. Additionally, the findings suggest that a greater degree of Self leadership moderates the association between creative self-efficacy and innovative work behaviours. A greater degree of

Self leadership indirectly promotes the beneficial association between learning organizations and innovative work behaviours through creative Self efficacy (Chughtai, & Khalid, 2022).

A research was conducted to assess the entrepreneurial leadership influences on employees' Innovative Work Behavior and suggests that the leaders of information and communications technology (ICT) SMEs in Iran encourage their employees' IWB through the development of their creative self-efficacy and support for innovation. The sample size was 175 chief executive officers, owners and managers of the enterprises, was chosen as of great technology ICT SMEs. The results demonstrate that the Innovative Work Behavior of employees in information and communications technology SMEs is significantly and positively affected by entrepreneurial leadership. Additionally, the relationship between entrepreneurial leadership and Innovative Work Behavior is mediated by workers' creative Self-efficacy and leaders' inspiration for invention. (Akbari, Bagheri, Imani, & Asadnezhad, 2021).

A study was carried out by Faraz, Yanxia, Ahmed, Estifo and Raza (2018), to advance and resolve discrepancies between transactional leadership and innovative work behaviour in the existing literature, first of all directly and then indirectly through the mediating function of intrinsic motivation 260 middle managers from Pakistan's power sector participated in a random sampling to provide data. This study's results demonstrate a clear relationship between Transactional Leadership and Innovative Work Behaviour. Furthermore, the interaction between them is largely mediated by intrinsic motivation.

Research conducted by Bagheri, Akbari and Artang, (2022), on the ways in which chief executive officers' (CEOs) entrepreneurial leadership behaviour foster employee creativity at work in knowledge-based organisations. The study makes the case that entrepreneurial leadership encourages workers' innovative work behaviour by raising their individual and group creative Self efficacy, drawing on social cognitive theory and the resource-based viewpoint of organisations. This sample was chosen from Iranian knowledge-based businesses through a straightforward random selection technique. In two distinct rounds, data from 207 workers and 41 CEOs were used to evaluate two mediation models. The findings confirmed that CEOs' entrepreneurial leadership enhances individual and group creativity self-efficacy, which in turn promotes workers' innovative work behaviour (Bagheri, Akbari, & Artang, 2022).

Many studies have demonstrated the importance of innovation inside organization, and thus, effective leadership has been suggested as a potential accelerator. Experimental research has regularly revealed a relation in transformational leadership and work unit effectiveness metrics. Additionally, to explore the moderating impact of manager and employee's gender, a research investigated the link in transformational leadership and worker creative work behaviour. Four Australian hospitals participated in the data collection, which resulted in a dataset comprising 335 respondents. The outcomes revealed a robust and favorable relation in transformative leadership and creative workplace behavior. This relationship was mediated through the gender of the manager, showing that men managers who exhibit transformational leadership are more likely than female managers to see their employees act creatively, supporting the gender bias theory (Reuverset al., 2008).

Research was conducted to comprehend the regulation impacts of smartphone addiction, which has lately become a problem in Korea, and analyze the beneficial benefits of proactive self-leadership and innovative behaviour that have been demonstrated in past research. It was found that the degree of smartphone addiction among college students might affect the association between self-leadership and innovative behaviour. The study may first comprehend the detrimental consequences of smartphone addiction and discover that by enhancing Self leadership of students in respect of self-management, innovative behaviour can be enhanced (Park, Moon, & Yang, 2014).

A study was conducted to examine the effects of psychological empowerment as a moderator on the connections in transformational leadership and creative work behaviour and also between authentic leadership and such behaviours. In a global technical business, a sample of 126 employees was used for the quantitative field research. The study provides more sustenance for the positive association between leadership and creative workplace behaviour. The research has revealed, in particular, that psychological empowerment moderates the relationship between true and transformative leadership and creative work behaviour. (Grošelj, Černe, Penger, & Grah, 2021).

It is presumable that psychological capital, mindfulness and, self-leadership, have significant theoretical connections with regard to job engagement. The concepts of psychological

capital, Self-leadership, mindfulness, and engagement at work were combined to propose a conceptual paradigm. 407 workers from various companies made up the sample. The findings indicated that psychological capital positively influences work engagement, as self-leadership is a more important factor in determining psychological capital than mindfulness, and that psychological capital completely mediates the self-leadership's influence on the work engagement element of dedication, and partly mediates the relationship between self-leadership and vigor as well as the effects of mindfulness upon vigor and dedication (Kotzé, 2018).

A study was carried out to evaluate the impact of psychological capital and a genuine leadership style on an Indonesian manufacturing company's creative work behavior. Additionally, psychological capital functions as a mediator in the connection in creative workplace behaviour and genuine leadership. Data from the 213 population were collected using simple random sampling. 195 samples were among the legitimate questionnaire responses that were received. Research results show that psychological capital and a genuine leadership style have a favorable and significant impact on innovative behaviour at work. A mediator for the link between a genuine leadership style and innovative behaviour at work was the psychological capital (Purwanto, Asbari, Hartuti, Setiana, & Fahmi, 2021).

In order to examine the joined impact of self-leadership techniques, psychological resources, and work embedding on workers' engagement at work in the banking organizations a sample of 303 employees were approached. This study results revealed that self-leadership strategies had an affect on job embedding and psychological resources in the workplace. The results revealed that self-leadership, psychological capital and work embedding have a considerable impact on Work Engagement and function as protection against the impacts of job demands (Harunavamwe, Nel, & Van Zyl, 2020).

The link between leadership style and creative work behaviour had been investigated in a number of earlier researches. Only a small number of empirical researches have, however, looked at how creative self-efficacy influences the association between entrepreneurial leadership and creative work behaviour. The research was done to bridge this knowledge space on the association in entrepreneurial leadership and Innovative work behaviour, and the function

of creative Self efficacy as a mediator for that association. A survey given to 190 Astra Honda Authorized Service Station staff was used for collecting the data. The findings show that entrepreneurial leadership encourages workers to work more innovatively. Additionally, entrepreneurial leadership fosters a more self-assured and inventive work environment for employees (Sarwoko, 2020).

Another research that was conducted to determine how a self-leadership intervention will affect the health care professionals' performance, engagement, and health at work. on a volunteer basis, 195 healthcare professionals from five different organizations were divided into the intervention and control groups. Findings of this study show that Self leadership training has a beneficial impact on health care professionals' performance and work engagement. Additionally, the increased job engagement also buffers the training's impacts on performance and health two months later (van Dorssen-Boog et al., 2021).

Study was conducted to look at how organizational culture and transformational leadership affect creative behaviour and job performance. 204 professors from three catholic institutions in Surabaya made up the sample. The study's findings suggest that organizational culture has a positively and important influence over innovative work behaviour, while transformational leadership has a negative and significant impact on performance. Innovative work behaviour also had a positive and important impact over performance, while transformational leadership has a negatively and significant influence on organizational culture (Ferdinan, & Lindawati, 2021).

Adiitionally to studying the role of psychological empowerment as a mediator, the research intended to explore the link between transformational leadership and workers' innovative work behaviour. Data from 139 employees were gathered for the research, which has a cross-sectional design. The results indicated that transformational leadership has a positive and significant relationship with both innovative work behavior and psychological empowerment using the Multifactor Leadership Questionnaire, and that transformational leadership encourages innovative work behavior through psychological empowerment. (Stanescu, Zbuceha, & Pinzaru, 2021).

A study was carried out by Yidong, and Xinxin, (2013) to examine that how Ethical Leadership Influence Workers' Innovative Work Behavior. A Viewpoint on Internal Enthusiasm they used multilevel analysis to test our expectations using questionnaires graded through a sample of 302 labors from 34 labor divisions of two enterprises in the Chinese continental. The findings revealed a positive association between an individual's inventive work behavior and both their perception of ethical leadership and the ethical leadership of their group, with the individual's intrinsic motivation acting as a mediating variable between the two interactions. Furthermore, team intrinsic motivation moderated the link between creative work behaviour and group ethical leadership.

A study carried out by Jnaneswar and Ranjit, (2023) investigated the sequential mediation mechanism between employee creativity and self-leadership via organizational commitment and job engagement. 324 people who worked in the Indian car sector provided the data. According to the findings of the study, employee creativity was impacted by self-leadership and the relationship between employee creativity and Self-leadership was mediated by both organizational commitment and job engagement individually.

Another study investigated how job crafting might influence an employee's innovative work behaviour under transformational leadership. The research also conducted that how information sharing behaviour affects the link between transformational leadership and creative work behaviour. A cross-sectional, quantitative technique was used to collect the data. 325 assistants and 126 supervisors who worked in the hotel business provided the information. The study's results showed that the effect of transformational leadership on an employee's innovative work behaviour was moderated by job crafting behaviours (raising structural job resources, social job resources, and job challenges). Additionally, the link between transformative leadership and creative workplace behaviour was reduced by information sharing. (Afsar, Masood, & Umrani, 2019).

Past research looked at how self-leadership techniques affected creative work behavior. By examining transactional and transformational leadership as the mediator in the link between Self-leading methods and innovative work behaviour, and further expanded the existing

theoretical model of innovative work behaviour. 745 industrial engineers in Malaysia constituted the study participants for this study, which employed a quantitative methodology. The findings indicated that behavioural, helpful thinking patterns, intrinsic rewards, and physiological techniques all had a substantial impact over innovative work behaviour. Only transformational leadership had a moderating influence upon the correlation between each self-leading technique and creative workplace behaviour (Omar, 2017).

A study was conducted to look at how empowerment, work engagement, and leader confidence may aid transformational leaders in inspiring their followers to engage in creative work behavior. 281 workers of global corporations in China provided the data. The findings revealed that innovative work behaviour was substantially interrelated with transformational leadership and work engagement (Li, Sajjad, Wang, Ali, Khaqan, & Amina, 2019).

Research was conducted to investigate the mediating role of psychological safety between inclusive leadership and creative work behaviour. Data were gathered from administrator-subservient pairs employed in Pakistan's textile sector. The outcomes indicate that inclusive-leadership and innovative work behaviour are positively correlated, and that psychological safety mediates this relationship. The theoretical model we developed was based on the leader-member exchange hypothesis (Javed, Naqvi, Khan, Arjoon, & Tayyeb, 2019).

Research conducted by Jada, Mukhopadhyay and Titiyal, (2019), to describe the link between empowered leadership and workers' innovative work behaviour. The research also addressed the mediating impact of distribution of information and the moderating impact of role clarity in the suggested model using a moderated mediation mechanism. The research employed a cross-sectional methodology, and a sample of 235 supervisor-subordinate employed in an Indian sector were given designed questionnaires to evaluate the hypothesized interactions. It was confirmed that role clarity between information sharing and empowering leadership has a moderating effect. Additionally, it was found that greater role clarity enhanced the nexus between empowering leadership and creative workplace behaviour. Generally, the research demonstrates that endowing leaders fosters creative work behaviour by promoting information sharing among the participants under the condition that employee responsibilities are well defined.

Green (2021), evaluated the impact of psychological capital and self-leadership on South African agricultural extension advisers' levels of job engagement. The study's main objective was to determine if psychological capital and self-leadership significantly affected how engaged agricultural extension advisers were at work. The study's second objective was to describe if there were any differences in the grades of work engagement in men and women agricultural extension advisers. 103 valid surveys in total were conducted. The findings using the stepwise multiple regression analysis shows that hope, optimism, and behavior-focused solutions were the three key predictors of job engagement and accounted for 62.8% of the variation in that variable.

In a study conducted by Knotts (2018), the self-leadership model was tested that takes organizational citizenship behaviours, emotional tiredness, and organizational commitment as mediators, and perceived organizational support as a moderating variable. Results from a sample of employees of transport department data indicate that Self leadership has a beneficial affect on employees' levels of organizational citizenship behaviours. The important mediating factor links Self leadership and both work engagement and organizational citizenship behaviours is emotional weariness, as well. But as a mediating factor, organizational dedication does not seem to have the same effect as emotional weariness. The connection between Self leadership and emotional weariness was shown to be moderated by perceptions of organizational support, supporting the moderating hypothesis. These findings collectively imply that Self leadership does effect organizational citizenship behaviours and work engagement.

Encouragement of nurses to exhibit more innovative behaviours has emerged as a key development path for enhancing the caliber of nursing services. The study set out to examine the influence of genuine leadership on nurses' innovation behaviours as well as the mediating function of job engagement in Jinan City, China. Self-report questionnaires were used to gather data. 2018 valid surveys in total were collected. It demonstrates that nurses are able to recognize managers' sincerity and those they need to work on exhibiting more innovative behaviour. It was discovered that the relation among genuine leadership and innovative activity was somewhat mediated by work engagement. According to the findings, it's critical to cultivate nurse managers' genuine leadership in order to encourage nurses' job engagement and innovative behaviour (Lv, Jiang, Chen, & Zhang, (2022).

Past research found that Work engagement and job performance among workers are influenced by transformational leadership behaviours and worker Self-leadership strategies. A sample of 57 distinct Leader employee dyads completed a quantitative diary survey. The outcomes of multilevel structural equation modelling revealed that when the leaders exhibited extra transformational leadership behaviours and when followers demonstrated additional Self-leadership strategies, workers were further engaged in their work and obtained better results evaluations from their leader. It also demonstrated that employee self-leadership was ineffective and that transformational leadership behaviours were extra successful when workers had a high vs. low need for leadership (Breevaart, Bakker, Demerouti, & Derks, 2016).

Study was conducted by Crossen, (2015) to create an integrated model of self-leadership by investigating the moderating effects of organizational formalization and the mediating impacts of leadership style on the link between self-leadership and follower engagement. The concept was empirically evaluated in two important New Zealand companies by gathering Self ratings of Self-leadership from 30 leaders and ratings of leadership style, formalization, and engagement from a sample of 73 followers. The findings point to an association between transformational leadership and behavior-focused leadership methods. Formalization was shown to strongly correspond to idealized influence conduct, individual consideration, and contingent incentives. The supporter engagement was favorably correlated with active leadership and adversely correlated with passive leadership. The authors have suggested that self-leadership may merit inclusion in future leadership paradigms.

Nursing staff performance outside of their assigned roles and the transformative leadership of supervisors, as mediated through nurse self-efficacy and work engagement, was the subject of a study guided by social cognitive theory. The extra-role performance of nurses was assessed by 17 supervisors, and the results produced a sample of 280 dyads. The participation percentage for nurses was 76.9% and for supervisors it was 100% in a big hospital in Portugal where the nurses were employed by various health care centers. Information was gathered in 2009. An evaluation of a theory-driven model of the relations among transformational leadership, work engagement, self-efficacy and nurses' extra-role performance employed structural equation modelling. There was a strong correlation between transformational leadership and work engagement. (Salanova et al., 2011).

Ghosh (2015) carried out a study to examine the influence of Self leadership on worker creativity and workplace creative orientation as influenced by the administration's culture of creativity. The study, using a novel technique, investigated the part of Self leadership in relation to worker creativity, the climate for creativity, and workplace novelty readiness. The outcomes of structural equation modelling analysis based on sample answers collected from the research, design, and growth units of a small total of organizations from various industries in the Indian background exposed the importance of the relations between Self leadership, worker creativity, the atmosphere for creativity, and workplace innovation. Additionally, the moderating impact of the creative climate on worker creativity and workplace innovation directions were studied while using post hoc analysis.

Study was carried out by Kanake, Kemboi and Tenai, (2020), to create and evaluate a conceptual framework that examined the connections between employee empowerment, employee engagement, and Innovative work behaviour. Worker engagement work as a mediating variable by mediating the relation between these two factors and helping the organization achieve its desired goals. The information was gathered from 470 respondents in Nairobi City County, Kenya's industrial sector using a self-administered questionnaire. Results revealed that worker empowerment had a favorable significant impact on worker engagement, and that both employee engagement and employee empowerment had favorable significant effects over Innovative Work Behavior. The results indicated that worker engagement somewhat mediated the association between employee empowerment and Innovative work behaviour (Kaname, Kemboi, & Tenai, 2020).

Innovative work behaviour and Employee engagement were evaluated as being moderated by the influence of achievement value and optimistic thinking. A cross-sectional technique was used to gathered data from 348 human resource officers in order to test the proposed relationships. The findings demonstrated that positive thinking has a statistically significant beneficial influence on employee engagement and accomplishment value in relation to innovative work behavior (Pukkeeree, Na-Nan, & Wongsuwan, 2020).

A study in Turkey examined the influence of work engagement on innovative work behaviour paying particular attention to its mediating role between the precursor variables of

psychological well-being, interpersonal conflict, and perceived organizational support. 416 workplaces across five industries were used for the study. Work engagement was examined as a mediator while using a cross-sectional correlational approach. The results of this investigation demonstrate that Psychological Well-being, Perceived organizational support, Work engagement, and Innovative work behaviour have a positive association. This suggests that resources are essential for boosting Work engagement and Innovative work behaviour. The association between interpersonal conflict and Innovative work behaviour was negative, as was to be expected (Koroglu, & Ozmen, 2022).

A study was conducted to examine that how psychological contracts relate to Innovative work behaviour, with job engagement serving as a mediating variable and organizational resources as a moderator. For empirical study, a survey of IT software providers in Rawalpindi and Islamabad was conducted. 177 workers' data were gathered via a questionnaire. Additionally, the study's results showed that job engagement partially mediated the link between relational contract, transactional contract, and creative work behaviour. The connection between a transactional contract, a relational contract, and job engagement was also influenced by organizational resources. Consequently, the interaction of transactional, relational and organizational resources improved employee engagement, which in turn improved the efficacy of their creative work behaviour. The results showed that psychological contract and creative work behaviour had a strong beneficial association (Hanif, & Khan, 2016).

Study was conduct by Vithayaporn and Ashton, (2019), to investigate the elements that affect worker engagement as well as how they affect organizations' innovative work behavior. For the quantitative technique of the study, a sample of 320 Thai Airways International staff members working as check-in, baggage service, boarding gate and lounge attendants were employed. The study findings showed that innovation and engagement go hand in hand, especially when it comes to inventive work behaviour that is affected by an engaged employee, who is also more inclined to act innovatively.

The impact of extrinsic rewards on workers' innovative work behavior was examined in a past study, which also looked at the function of employee job engagement as an intermediary

between extrinsic rewards and employees Innovative Work Behavior. Additionally, it explored how perceived organizational support influences the relationships between extrinsic rewards and worker job engagement. The data from 307 participants of the higher education department, which included academic members and administrative employees from Pakistani universities, were gathered using a survey approach. The research found that employee Innovative work behaviour was improved by extrinsic rewards. The findings highlighted the mediational function of work engagement, and it also found a stronger connection between employee job engagement and extrinsic incentives in high perceived organizational support environments than in the low ones (Yaqoob, & Kitchlew, 2022).

Putra, Riana, and Surya (2020) conducted a study to examine how work engagement and authentic leadership affect innovative work behaviour. A total of 96 employees were the participants of the study. The study findings revealed that work engagement and authentic leadership can enhance innovative work behavior and it was also came out that job engagement has a greater influence on innovative work behaviour than authentic leadership (Putra, Riana, & Surya, 2020).

Past research examined that how interpersonal trust and job engagement promote cultural intelligence, which in turn improves workers' creative work behaviour. The work used data from 381 individuals from multinational firms in Saudi Arabia and has a cross-sectional design. The findings show that cultural intelligence may have a strong influence on how inventive an individual is during work (Afsar, Al-Ghazali, Cheema, & Javed, 2020).

One of the study conducted in Pakistan banking sector examined the role of work engagement between servant leadership and employees' creative work behaviours and found that the employee's innovation is directly correlated with servant leadership, whereas employee's work engagement is shown to mitigate this relationship (Rasheed, Lodhi, & Habiba, 2016).

A study was conducted by Swaroop, and Dixit (2018), to examine how employee autonomy and engagement affect creative work behaviour in organizations. 267 workers, 231 men and 36 women, working for different Indian organizations provided the data. Employee

engagement and work autonomy were both positively correlated with creative work behaviour,. It was looked that employee engagement did not attenuate the beneficial relationship between work liberty and innovative work behavior.

A study was done by Imran and Al-Ansi, (2019), to determine how Job engagement and the High Performance Work System affect innovative work behaviour. Additionally, job engagement was investigated as a mediating variable in the relationship between High Performance Work System and innovative work behaviour. Purposive sampling was used to choose 260 respondents who were employed by Omani service sector organizations. The findings showed that High Performance Work System and work engagement had a favorable and substantial influence over innovative work behaviour.

The internal ecology of Chinese businesses is drastically altering due to the current trend of using mobile at workplaces, which is also increasing employee stress. In order to examine the causes of mobile workplace stress on employee creative behaviour as well as the effect of work-family conflict on employee engagement, the researchers collected the data from a sample of 426 male employees from software and IT center. Results revealed that worker invention behaviour was significantly damaged by mobile stress at workplaces as well as, it significantly decreases worker engagement and work-family friction. Additionally, the association among mobile workplace stress and employee creative behaviour was partially mediated by work-family conflict; employee involvement results in the suppressive effects. Employee innovative behavior is impacted by the mobile workplace via a chain reaction between work-family conflict and employee engagement. When concentrating on the mobile workplace's high performance, we should also consider how it affects the business's capacity for innovation (Wang, Zhang, & Chun, 2022).

Based on the Broaden-and-Build Theory of Positive Emotions, a study proposed that a high degree of job engagement will promote academics' innovative work behaviour by learning goal orientation. Additionally, the relationship in job engagement and innovative work behaviour was explored, and the function of learning goal orientation as a mediator. Data were collected via questionnaires from 265 academic staff members from six public institutions in Peninsular

Malaysia's northern and central regions. According to the findings, highly engaged academic staff members were more inclined to demonstrate a greater degree of learning goal orientation that eventually tends to participate in creative job behaviour. (Yean, Johari, & Yahya, 2016).

By examining the connection between Self leadership and team member work role performance, adaptivity, and proactivity, including individual task and team member competence, the research aimed to further existing study on self-leadership. It also seeks to analyse collectivism's moderating influence. Partially least squares modelling were used to analyse organisational members of the team Self ratings of Self leadership and six job role performance variables (i.e., individual task and team member competence, adaptivity, and proactivity, correspondingly). The findings show a strong correlation between self-leadership and competence, adaptability, and proactive behaviour aimed at both the team and also the individual task. According to the findings, collectivism may have mitigated the relation in team member competency and Self-leadership (Hauschildt, & Konradt, 2012).

A study investigated sharing mistakes as mediator in the way work engagement affect innovative behavior of IT experts. The statistical population of this study comprises IT professionals working for IT firms who are also members of the Iranian province of Khorasan Razavi's Computer Union Organization. A total of 120 IT professionals in Mashhad, Khorasan Razavi province, received the questionnaire. To assess the data, structural equation modelling was employed. The study's outcomes indicate that discussing errors and idea development were positively impacted by work engagement. Sharing errors also modulates the effect of job involvement on coming up with and spreading ideas (Jahangir, Khorakian, & Lagzian, 2023).

Study was conducted by Ariyani and Hidayati, (2018) to examine how transformational leadership and workplace engagement affected creative behaviour in Indonesia's banking sector. 378 persons were included in the samples and purposive sampling technique was used. The multiple linear regression analysis was the method for the analysis of the data. The findings demonstrate that work engagement, which is acting as a mediating variable to the beneficial effects of transformational leadership on creative behaviour, had a large and positive influence upon innovative behaviour (Ariyani, & Hidayati, 2018).

Kim and Fan (2018) investigated the influence of self-leadership over the linkages between workers' innovative work behaviours and their cultural value orientations were investigated. Four hundred eighty-two workers from various businesses in China and Korea responded to a questionnaire that asked them about power distance, innovative work methods, and avoiding ambiguity. According to data analysis, uncertainty avoidance was favorably correlated with innovative work behaviour for both respondents whereas power distance was adversely correlated with it. Self-leadership's role as a mediating variable was also found.

Past research carried out to examine how leadership influences the innovative work behavior and performance of Research and Development professionals. The work demands-resources theory of engagement and the behavioural theory of leadership were followed. The biggest civilian R&D body in India, which employs 467 scientists, gathered and used structural equation modeling to assess the data. The study found that creative work behavior and performance were both positively correlated with job engagement. Through work engagement, leader behaviours had a strong indirect impact on both creative work behaviours and performance. The overall impact of leadership on creative work habits was not substantial in terms of creative performance (Gupta, Singh, & Bhattacharya, 2017).

With self-efficacy and optimism serving as mediating factors, the study sought to examine the connection between self-leadership and creative conduct in the workplace. 121 mathematics instructors participated in this study. The findings demonstrated that, self-leadership enhanced self-efficacy and optimism but had opposite effect on innovative behavior (Rizana, 2022).

Past research indicated that social support and psychological empowerment had an impact on job engagement and produced creative work behaviours. It also found that these two factors were related to each other. The Indian IT industry's 340 business analysts, namely from TIDEL Park in Coimbatore, made up the sample. The study's findings show a significant association between the concepts of social support, work engagement, psychological empowerment, and innovative work behaviour. In such setting, it was discovered that social

support and psychological empowerment had a significant impact on both job engagement and creative work behaviour. Job engagement was also identified as partial mediator amongst, social support, psychological empowerment, and innovative work behavior (Krishnaveni, 2019).

Jada, Mukhopadhyay, and Titiyal (2019) conducted a study to determine the association between effective management and workers' innovative work habits. The study also demonstrated, using a moderated mediation mechanism, information exchange as a mediator and role clarity as a moderator in the proposed model. The research employed a cross-sectional methodology, and 235 supervisor-subordinate working in Indian organizations were given designed questionnaires to evaluate the hypothesized interactions. The model of moderated mediation that was proposed was confirmed. The connection between empowered leadership and innovative workplace behaviour was mediated by knowledge sharing. It was confirmed that role clarity between information sharing and empowering leadership has a moderating effect. Additionally, it was shown that greater role clarity enhanced the nexus between empowering leadership and innovative workplace behavior.

Study was carried out to look into the affects of Self leadership (SL) on various levels of worker innovative work behaviour in Pakistan's telecom sector. Self-leadership's overall influence on the Innovative work behavior was also examined. Based on the findings of the regression analyses, it was found that self-leadership had a substantial influence on each of the three stages of innovative work behavior. Additionally, self-leadership's overall impact on Innovative work behaviour was also found. The study's findings led to the conclusion that self-leadership is a potent motivating factor and that it enables workers to exhibit innovative behaviour at all stages of the idea-generation and realization process (Rasool, 2020).

Based on the concept of social exchange and the spillover hypothesis, the research explored how workplace spirituality influences creative work behaviour and employee welfare. Additionally, it examined the understudied mediation role of worker involvement in the connection between the outcomes that have been discussed and workplace spirituality. It also looked at the interaction amongst personal spirituality and workplace spirituality in terms of employee engagement. 538 employees and managers from IT industry of Pakistan participated in

two waves of surveys. The study enhances to the growing a corpus of information on workplace spirituality by demonstrating how this practice enhances employee health and innovative work behaviour. Employee engagement has a key moderating part in the interaction amongst workplace spirituality, employee wellness, and innovative work behaviour. Additionally, the findings support the idea that an individual's level of spirituality determines how much of an impact workplace spirituality has on employee engagement (Salem, Ishaq, Yaqoob, Raza, & Zia, 2023).

According to research, there is a causal relation in organizational innovation and worker engagement. The study found that employee engagement encourages innovative behaviour in which workers collaborate with one another, suggest improvements to the company, and make efforts to improve the company's reputation in the public eye. It mostly used secondary data sources, with interviews serving as a complement. Innovation and involvement have been demonstrated to support one another. Innovative businesses are better able to motivate and engage their people, and inventive employees are better able to be innovative themselves. The study's conclusion is that in order to contribute creative ideas and advance their businesses despite extraordinary economic, demographic, social and environmental challenges, Companies need to concentrate their energies on releasing the imaginative capabilities of all of their human resources, involving both consumers and workers (Rao, 2016).

A study was conducted to examine Innovative work behaviour and the effects of learning agility, workplace engagement, and digital preparedness on DKI Jakarta employees. This was a quantitative study that was conducted through a survey approach with 407 workers of DKI Jakarta as respondents. The research gave statistical evidence that each of the three variables—work engagement, digital readiness, and learning agility—has a substantial and favorable influence on workers at DKI Jakarta's creative work behaviour. Additionally, each factor (job engagement and digital readiness) has a considerable and advantageous effect on learning agility. However, learning agility does not play a part in determining the association between creative work behaviour, digital preparedness, and job engagement. (Riswan, Salsabila, Mulya, & Saputra, 2021).

To understand how and when ethical leaders support workers' innovative work behaviours, social exchange theory and social learning theory were followed in the study. To study the mediating effects of job engagement and psychological safety and also the moderating effects of openness to experience, the research specifically created a moderated mediation model. 397 full-time workers of various service sector businesses with operations in China participated in the survey, which was conducted in two rounds with a two-week interval between each. Findings showed that workers' creative work behaviour was favorably correlated with ethical leadership. By mediating psychological safety and work engagement, ethical leadership greatly influenced workers' creative work behaviours. The results also showed that the positive relationship between job engagement and creative work behaviour amongst employees was moderated by openness to experience. Finally, openness to experience (via work engagement) moderated the indirect relationship between moral leadership and employees' innovative work behaviour (Liu, Huang, Kim, & Na, 2023).

Past research, which looked at the areas of psychological empowerment, work engagement, and innovation, it was found that psychological empowerment had an impact on job engagement and resulted in high innovation and a decreased desire to turn over. It has been shown that psychological empowerment significantly affects both job engagement and innovation. 291 managers from the pharmaceutical, electronics, Information Technology, heavy engineering, and aeronautical engineering industries in India were the respondents. The findings shows that the main mediator between psychological empowerment and creativity was work engagement. Strong empirical relationships between the concepts of psychological empowerment, innovation, work engagement, and plan to leave the job were provided by this study (Bhatnagar, 2012).

Study was done to investigate that how creative work behaviour is influenced by entrepreneurial leadership and how work engagement mediates that connection. It also assessed how gender moderated in this connection. Using a structural equation model, it investigated work engagement as a mediator the relationship between entrepreneurial leadership and creative behaviour, and gender was also as a mediating variable. The results demonstrate that entrepreneurial leadership significantly enhanced inventive behaviour. It provided evidence of a

strong work engagement mediation effect in the relationship between entrepreneurial leadership and creative work behaviour. Moreover, gender moderation was supported, demonstrating that women were more impacted by entrepreneurial leadership when it comes to creative behaviour as compared to males (Pinela, Guevara, & Armijos, 2022).

A study was carried out to examine the connection between job embedding and worker engagement at work. Additionally, it examined the part that innovative work behaviour takes in mediating the association between employee work engagement and job embedding. Employees of telecom businesses made up the study's respondents. The information was taken from Pakistan's five largest cities. Results showed that job embedding has a favorable and significant impact upon employee work engagement. Additionally, research shows that innovative work behaviour significantly mediates the association between job embedding and employee work engagement. (Bhanbhro, Memon, Qureshi, Mushtaque, Iqbal, & Akhtar, 2021).

A study was conducted to: (a) utilizing the JD-R model, offer a thorough grasp of the connection between employee engagement and creative behavior; (b) determine and examine the guiding ideas used to inform research on employee engagement ; and (c) provide a comprehensive conceptual framework based on variables with experimentally supported connections, as well as pertinent theories. According to a comprehensive analysis of 34 empirical researches, employees believed that a balance between relatively increased high and demand were excellent for their engagement. Innovative behaviour was a result of these complex interfaces, and involved workers were more possible to act innovatively by using coping mechanisms to resolve problems. Both these outcomes indicate to a conceptual framework that integrates improvements to the original JD-R model and, because of this, more clearly explains the dynamics linked to worker engagement and innovative behaviour (Kwon, & Kim, 2020).

Enhancing organizational performance is largely dependent on work engagement. Work Engagement has received less attention in developing economies, particularly in Pakistan. One of the most recent studies employed a survey questionnaire to look at how Work engagement and Organizational performance relate to one another. Moreover, the moderating impact of perceived distributive fairness and the mediating impact of Innovative work behaviour were both

investigated. Data gathered from 535 workers in the industrial sector revealed that Work engagement significantly improve Innovative work behaviour and Organizational performance. However, after adding perceived distributive fairness as a moderator, this impact intensifies. Additionally, Innovative behavior's mediating influence was also demonstrated (Waheed, Ahmad, & Karamat, 2023).

A motivated person will actively immerse themselves and work to benefit the organisation via increased output, improved efficiency, and significant innovation. An employee's positive thought-action is stimulated by a motivating circumstance like work engagement, which subsequently enhances their innovative work behaviour. This association between work engagement and innovative work behaviour has been the focus of several past research, with various levels of effectiveness. 26 journals and 26 correlation coefficients were used in this investigation. According to the statistical analysis, there is a medium effect size link between innovative work behaviour and work engagement. Work Engagement and Innovative Work Behaviour have moderate to strong correlations. According to the research findings, innovative work behaviour is not primarily influenced by work engagement (Sari, Sinambela, & Yudianto, 2021, April).

Investigating the mediating function that job engagement plays in the relationship between curiosity and innovative work behaviour was the main objective of a study. The research was set in the early pandemic phases beginning in April 2020, when foreign travel became prohibited. In the United Arab Emirates (UAE), 327 respondents from 32 organizations in the aviation sector filled out self-administered questionnaires. The study results confirmed the hypothesis that job involvement mediates the link between curiosity and innovative work behaviour (AlShamsi, Ahmad, & Jasimuddin, 2022).

A study was done by Siddiqi (2015), to highlights the significance of innovative work behaviour and work engagement and also exemplifies the direct and positive effects that various workplace variables, like employee autonomy and organizational support, have on both employee work engagement and innovative work behaviour. The samples used in the past study were from some of the prominent two-wheeler producers in India's automotive sector. This

indirect connection between these work environment variables and employee innovative work behaviour through work engagement has been fully supported by path analysis. Work engagement mediated the relations between the workplace environment and employees' innovative work behaviour.

In order to understand how employee competence and innovative behaviour impact employees' performance at PT Tetra Pak Indonesia, the research sought to identify the mediating role played by employee engagement. The study's population employed a saturated sample of all service engineer staff, with a total of 76 service engineers as participants. The research's results of the study indicated that creative conduct had no discernible influence on employee performance. Competence contributed to a rise in employee engagement, which in turn might inspire innovative conduct and improved performance from the workforce. (Budiprasetya, & Lo, 2021).

A study was done by Uppathampracha and Liu (2022), to determine the link between moral leadership and innovative behavior at work, as well as the role of self-efficacy as a mediating factor and the sequential mediation of self-efficacy and work engagement. The data were gathered from 441 banking workers in Thailand's southern area using a survey methodology. The outcomes by using structural equation modelling revealed a relationship between innovative work behaviour, Self-efficacy, and ethical leadership, respectively. Self-efficacy was link with both creative work behaviour and job engagement. Innovative work behaviour was linked to work engagement. The mediation study's findings suggested that self-efficacy may have function as a mediating variable in the relationship between moral leadership and inventive behavior at work. In the end, it was established that moral leadership and creative work behaviour sequentially mediated self-efficacy and job engagement. This research clarifies on how to comprehend the link between moral leadership and creative work behavior.

There were three key goals for the study: First, to investigate how transactional leadership affects knowledge sharing and creative work behaviour. Second, to investigate how information sharing affects creative work behaviour. Third, to investigate how information sharing affects the link between creative work behaviour and transactional leadership. A

questionnaire is used to gather information from a whole of 107 workers who took part in the study, and the quantitative approach is thought to be acceptable for this study. The study findings show that knowledge sharing is positively and significantly impacted by transactional leadership. However, transactional leadership has little direct influence on creative work behaviour. Knowledge sharing also had a good and important impact on creative work behaviour. The research indicates how, in the distribution market, information sharing becomes a crucial mediator of transactional leadership and creative work behaviour. (Udin, DANANJOYO, & ISALMAN, 2022).

Another research, which is grounded in the social exchange theory, was to explore the direct and indirect effects of ethical leadership on servant innovative work behaviour. It also looks at the role played by individual factors like flourishing during work and performance-oriented mindsets. Employees in the service industry from two separate samples—the Pakistan and U.K.—were used in the multi-source and cross-sectional study design to gather the data while using self-reporting survey questionnaires. The results validated the proposed paradigm, which examined direct and dual mediation. The findings that how psychological conditions and positive attitudes work together to make people feel good, which improves their ability to think creatively and put new ideas into practice (Iqbal, Abid, Contreras, Hassan, & Zafar, 2020).pr

A study was carried out by Kong and Li (2018), to examine the possible role of work engagement and job-related affect as mediators between proactive personality and inventive behaviour was investigated. 320 teachers from western China's primary and middle schools filled out the Proactive Personality Scale, Positive and Negative Affect Schedule, Work Engagement Scale, and Innovative Behaviour Scale. The findings demonstrated a substantial and favorable relationship between the instructors' creative behaviour and proactive personality. Positive affect and job engagement served as modest mediators for the connection among proactive personality and inventive behaviour, as well as their subsequent mediating effects.

There were two objectives for the study. First, let's dispel any misunderstandings about the study on the impact of transformative headship upon workers' creative work behaviour. 2. to examine the mediating function that admirable work has in explaining the connection between transformative leadership and creative work practices. Sample I (349 executives) and Sample II

(539 executives) were two samples for the study, who worked for two separate engineering companies in Eastern India, provided the data. The findings from both samples show that transformative leadership has a big impact on how innovative employees behave during job. Additionally, the current work (both Samples I and II) discovers that small mediating element in the relationship between transformative leadership and employee creativity is meaningful work. (Pradhan, & Jena, 2019).

A study was conducted by Tekeli and Özkoç (2022), to determine the potential mediating influence of work engagement on the relations of proactive personality and locus of control traits on workers' creative work behaviours, a field research was carried out, and the data of this study were gathered utilizing the questionnaire approach. Staffs working in hotel enterprises of the department of beverages and foodstuffs made up the research population. Because these departments handle sophisticated tasks, an abundance of competent workers were obligatory. According to the findings the Work engagement was positively and significantly impacted by proactive personality characteristics and commitment levels; however, the mediating effect of external locus of control on creative entrepreneurial action was not recognized as being particularly important. Employees' propensity to engage in innovative entrepreneurial behaviour was positively influenced by their level of commitment and proactive personality traits (Tekeli, & Özkoç, 2022).

Study carried out by Ali (2020), to objectively evaluate the impact of employee's engagement on the relationship between organization's environment for innovation and inventive work behaviour. A closed-ended questionnaire was utilized as the data gathering instrument. The findings showed that innovative work behaviours were influenced both directly and indirectly by the organizational environment for innovation and innovative work behaviour. Employee involvement in the work served as a partial mediator between the corporate environment for innovation and creative work practices. In this survey, about 210 respondents took part. Employees served as the study's analytical unit. It would be helpful for HR professionals who are interested in expanding the number of effective interventions that motivate staff members to engage in creative work behaviours on a practical level. The research contributed to the

knowledge of how innovative work conduct and organizational environment interact, with employee engagement serving as a mediator.

A study was conducted to determine if humble leadership influences Chinese nurses' innovative conduct and to look into the mediating function that work engagement plays in this connection. The information was gathered in China. To measure modest leadership, creative conduct, a sample of 377 nurses responded was collected. To validate the research hypotheses, a structural equation model was used. Nurses' creative conduct and job engagement were strongly and favorably correlated with humble leadership. Additionally, job engagement had a role in mediating some of the association between modest leadership and innovative behaviour (Yang, Zhou, Wang, Lin, & Luo, 2019).

It was investigated that how learning organizations and workplace engagement affect innovative behaviour. Work Engagement was also noted to act as a mediating factor in the association between innovative behaviour and learning organization. Information was gathered from 97 employees of firm X, an Indonesian IT company, using a Self-reported questionnaire. Individual in-depth interviews with Company X's leaders were performed to acquire a more thorough insight. This study's results revealed the beneficial influence of work engagement and learning organizations on innovative behaviour. The research also discovered that the relationship between Learning Organization and Innovative Behaviour was mediated by Work Engagement. The study suggests that in order to encourage innovative behaviour among employees, organization and the role of communities and teams in learning systems must be considered by human resource professionals, who should put more emphasis on engagement (Soetantyo, & Ardiyanti, 2018).

Study carried out Putra and Mardikaningsih (2022) examined the effect of leadership variables, innovative behavior and work involvement on worker performance. Observations were performed on 88 individuals who were chosen at random to serve as study samples. The study's findings show that creative behaviour and leadership have a significant beneficial influence on employee performance. Moreover, work engagement significantly enhances employee performance.

Rationale of the Study

As mentioned above, the existing body of literature in the relevant field shows that a modest research attention has been given to the self-leadership and innovative behavior at work. Specifically, the past literature have not focused on the indirect relationship between Self-leadership and Innovative behavior at work. This research seeks to address this issue of how Self-leadership influences Innovative work behavior. There is also a need to explore Self-leadership in non-western and local context to determine the generalizability of Self-leadership theory and to better understand its effects, especially the Innovative work behavior.

This study aimed to measure the relationship between Self leadership and innovative work behavior by examining the mediating role of work engagement among IT professionals, while Self Leadership, Work Engagement and Innovative Work Behavior have been studied in various contexts, there is a lack of research that specifically focuses on IT professionals in Khyber Pakhtoonkhwa, Pakistan. Given the unique cultural and organizational context, this study will fill an important gap and offer context-specific understanding.

The IT industry in Khyber Pakhtoonkhwa has experienced significant growth in recent years, becoming a vital for economic development and job creation. As the industry continues to expand, understanding factors that contribute to enhanced work outcomes, such as work engagement and innovative work behavior become crucial. Self-Leadership in an essential aspect that influences employee's ability to effectively manage themselves and their work responsibilities. To explore the relationship between Self Leadership, Work Engagement and Innovative Work Behavior, this study can provide valuable insights into optimizing work performance in the IT sector of the region.

Innovative Work Behavior is crucial for organizations to stay competitive in the dynamic IT Industry. The ability of IT professionals to generate and implement innovative ideas can lead to the development of cutting-edge products, services and solutions. By examining how Self Leadership practices contribute to fostering a culture of innovation, organization can better design interventions and to promote creativity and idea generation among employees.

Conceptual Framework

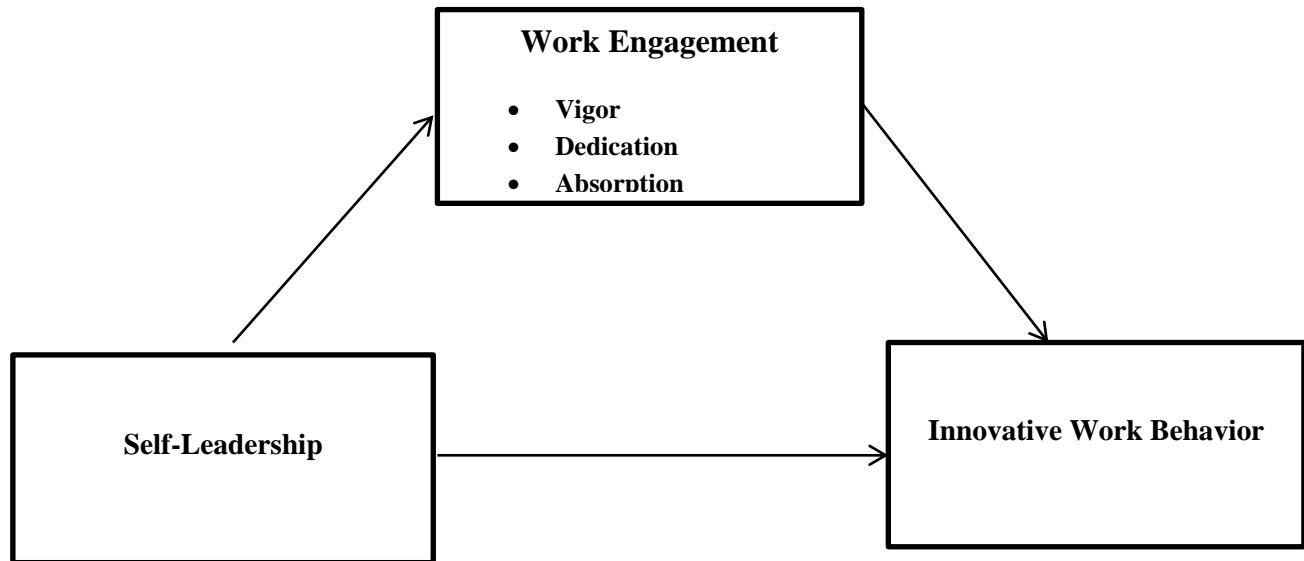


Figure 2: Relationship between Self leadership and Innovative work behavior: The role of work engagement.

METHOD

Objectives

The study contains following objectives:

- To examine the relationship between Self Leadership, Innovative Work Behavior and Work Engagement.
- To investigate the mediating role of Work Engagement and it's sub dimensions in Self Leadership and Innovative Work Behavior among IT professionals.
- To explore the role of demographic variables such as sectors (Public and private) and experience on Self Leadership, Work engagement and Innovative Work Behavior.

Hypotheses

- 1: Self-leadership is positively associated with Innovative Work Behavior.
- 2: Self-leadership is positively associated with Work Engagement.
- 3: Work engagement is positively associated with Innovative Work Behavior
- 4: Work engagement mediates the relationship between Self-leadership and Innovative Work behavior.
- 5: Vigor mediates the relationship between Self-leadership and Innovative Work behavior.
- 6: Dedication mediates the relationship between Self-leadership and Innovative Work behavior.
- 7: Absorption mediates the relationship between Self-leadership and Innovative Work behavior.

Operational Definitions

Self-leadership

According to Manz (1986), self-leadership is the process through which individuals inspire themselves to perform and be more successful.

In the current study Self-leadership was operationalized on Abbreviated Self Leadership Questionnaire (ASLQ; Houghton et al., 2012). Higher scores indicated higher Self-leadership; lower scores indicated lower Self-leadership.

Work Engagement

The definition of work engagement that applies most commonly, according to Schaufeli et al. (2002), is "a positive, satisfying, work-related state that is marked by vigor, dedication, and absorption".

In this study Work Engagement was measured on Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2003). Higher scores indicated higher level of one's Work Engagement, whereas lower score showed lower level of Work Engagement.

Innovative Work Behavior

Farr and Ford (1990) define Innovative work behavior as to originate and consciously introduce new and useful ideas, processes, products, or procedures (within a work position, group, or organization).

In this study Innovative Work Behavior was measured on Innovative Work Behavior Scale (IWBS; Zaman, 2006) Higher scores indicated higher level of one's Innovative Work Behavior, whereas lower score showed lower level of Innovative Work Behavior.

Instruments

Abbreviated Self-leadership Questionnaire (A-SLQ)

This scale was developed by Houghton, Dawley and DiLiello (2012), which have 9 items. It is a 5-point Likert scale ranged from 1 (Not at all accurate) to 5 (Completely accurate). Authors reported Chronbach's alpha reliability estimate for the scale as greater than .70. For the present sample, Chronbach's alpha reliability coefficient was .71 which indicated that scale was quite reliable.

Work Engagement Scale

This scale was developed by Schaufeli and Bakker, (2003), comprised of 17 items which are divided into 3-dimensions. Vigor and its items (1, 4, 8, 12, 15), Dedication and its items (2, 5, 7, 10, 13), Absorption and its items (3, 6, 11, 14, 16). It is a 7-point Likert scale ranged from 1 (Never) to 7 (Always). Authors reported Chronbach's alpha reliability estimate for the scale as .84 for Vigor, .91 for Dedication, and .86 for Absorption respectively. For the current research Chronbach's alpha reliability coefficient was .43 for Vigor, .49 for Dedication, and .42 for Absorption, which indicated that scale was quite reliable.

Innovative Work Behavior Scale

This scale was developed by Sahira Zaman (2006). It comprised of 27 items. It is a 5-point Likert scale ranged from 1 (To a very little extent) to 5 (To a very great extent). Authors reported Chronbach's alpha reliability estimate for the scale as .91. For the present sample Chronbach's alpha reliability coefficient was .79 which indicated that scale was quite reliable.

Research Design

A cross-sectional research design was adopted. The study explored the relationship among Self Leadership, Work Engagement and Innovative Work Behavior. Three questionnaires were used for the data collection on the sample of 300 IT professionals.

Sample

A purposive convenient sampling technique was used to collect the data from 300 IT professionals from different IT sectors of Khyber Pakhtoonkhwa. There were 283 males and 17 females. Their age ranged from 21 to 60 years, with a mean of 29.71 (SD=6.54). The data were taken from both public ($N=101$) and private ($N=199$) sectors. Their total experiences were categorized in to three categories, experience up to 10 years ($N=222$), experience up to 20 years ($N=69$), and experience up to 30 years or above ($N=9$).

Procedure

IT professionals whose age ranged from 21 to 60 were selected from various public and private IT sectors of Khyber Pakhtoonkhwa province. After taking approval from higher authorities of the said organizations the informed consent was given to the IT professionals and they were informed about the purpose of study. Those willing to take part in the study were provided a complete booklet that contained a demographic information sheet along with three scales i.e. Self-leadership Questionnaire, Work Engagement Scale and Innovative Work Behavior Scale and were given complete instructions regarding the questionnaires. They were instructed to give each item a rating based on their view and urged to make sure that no question went unanswered. No time limit was imposed to complete the questionnaire. Finally, participants were thanked for their cooperation and time.

RESULTS

Table 1

Item-total correlation of Abbreviated Self-leadership Questionnaire (N=300).

Items	Item-total correlation
1	.55**
2	.47**
3	.54**
4	.55**
5	.60**
6	.60**
7	.47**
8	.57**
9	.58**

p^{**}<.01

Table 1 shows the Item total correlation of Abbreviated Self Leadership Questionnaire. The findings show that all the values are significantly positively correlated.

Table 2*Item-total correlation of Innovative Work Behavior Scale (N=300).*

Items	Item-total correlation
1	.31**
2	.44**
3	.34**
4	.48**
5	.38**
6	.44**
7	.37**
8	.35**
9	.55**
10	.50**
11	.40**
12	.37**
13	.40**
14	.43**
15	.42**
16	.40**
17	.32**
18	.44**
19	.45**
20	.39**
21	.40**
22	.43**
23	.41**
24	.32**
25	.35**
26	.40**
27	.45**
28	.29**

p **<.01

Table 2 shows that all items are significantly and positively correlated with total test scores.

Table 3*Item-total correlation of Work Engagement Scale (N=300).*

Items	Item-total correlation
1	.36**
2	.43**
3	.36**
4	.47**
5	.48**
6	.44**
7	.52**
8	.34**
9	.45**
10	.43**
11	.41**
12	.39**
13	.40**
14	.41**
15	.42**
16	.36**
17	.44**

**<math>p < .01</math>

Table 3 shows the Item-total correlation of Work Engagement Scale. The findings show that all the items are significantly positively correlated with the total test scores showing the internal consistency among the items.

Table 4

Item-total correlation of Vigor Sub-Scale of Work Engagement (N=300).

Items	Items-total correlation
1	.53 ^{**}
4	.51 ^{**}
8	.42 ^{**}
12	.56 ^{**}
15	.52 ^{**}
17	.51 ^{**}

^{**} $p < .01$

Table 4 shows the Item-total correlation of Vigor subscale of Work Engagement. The findings show that all the values are significantly positively correlated.

Table 5

Item-total correlation of Dedication Sub-Scale of Work Engagement (N=300).

Items	Items-total correlation
2	.56 ^{**}
5	.60 ^{**}
7	.62 ^{**}
10	.56 ^{**}
13	.53 ^{**}

p^{**}<.01

Table 5 shows the correlation of each item of Dedication subscale with total subscale scores. The findings show that all the values are significantly positively correlated indicating the internal consistency of the items.

Table 6

Item-total correlation of Absorption Sub-Scale of Work Engagement (N=300).

Items	Items-total correlation
3	.488 ^{**}
6	.55 ^{**}
9	.52 ^{**}
11	.53 ^{**}
14	.51 ^{**}
16	.46 ^{**}

^{**} $p < .01$

Table 6 shows the Item-total correlation of Absorption subscale of Work Engagement. The findings show that all the values are significantly positively correlated with the total subscale scores.

Table 7

Descriptive Statistics and Alpha Reliability Coefficient of Study Variables and their Sub-scales (N=300).

Variables	No. of Items	Alpha	M	SD	Range		Skewness	Kurtosis
					Actual	Potential		
SL	9	.71	29.71	6.54	13-42	9-45	-.509	-.397
WE	17	.70	84.73	11.87	53-111	17-119	.008	-.524
VG	6	.43	29.59	5.10	15-41	6-42	-.310	-.059
DD	5	.49	25.70	4.95	11-35	5-35	-.272	-.242
AB	6	.42	29.44	4.98	10-39	6-42	-.501	.119
IWB	27	.79	102.27	12.10	63-135	28-140	-.061	.226

NOTE. SL = Self Leadership; WE = Work Engagement; IWB = Innovative Work Behavior; VG= Vigor; DD= Dedication; AB; Absorption.

Table 7 shows descriptive statistics and Alpha reliability coefficients of the study variables. Data were normally distributed as all the values of Skewness and Kurtosis are within the acceptable range. The internal consistency reliability for the main variables varies from .70 to .79, however the reliability values for the three subscales are quite low and varies from .42 to .49.

Table 8

Correlation of main study variables (N=300)

Variables	1	2	3
1 Self-Leadership	--	.068	.135*
2 Work Engagement		--	.312**
3 Innovative Work Behavior			--

Note. * $p < .05$, ** $p < .01$

The above table determines that Self leadership is positively but non-significantly correlated with Work Engagement. The Self leadership is positively and significantly associated with Innovative Work Behavior. The Work Engagement is significantly positively correlated with Innovative Work Behavior.

Table 9*Sector related differences on Self-Leadership (N=300)*

Public Sector (n=101)		Private Sector (n=199)		t(298)	p	MD
M	SD	M	SD			
28.19	6.77	30.49	6.30	2.89	.004	-2.29

Table 9 shows mean differences between Public Sector and Private Sector IT professionals on Self-leadership. The results revealed that there are significant differences in Self-leadership between Public and Private Sector IT professionals with high mean scores for private sector as compared to public sector.

Table 10*Sector related differences on Work Engagement (N=300)*

Public Sector (n=101)		Private Sector (n=199)		t(298)	p	MD
M	SD	M	SD			
86.00	11.37	84.09	12.10	1.31	.19	1.90

Table 10 shows mean differences between Public Sector and Private Sector IT professionals on Work Engagement. The results revealed that there is no significant differences in Work Engagement between Public and Private Sector IT professionals with low mean scores for private sector as compared to public sector.

Table 11*Sector related differences on Innovative Work Behavior (N=300)*

Public Sector (n=101)		Private Sector (n=199)		t(298)	p	MD
M	SD	M	SD			
102.53	11.88	102.14	12.24	.266	.79	.39

Table 11 shows mean differences between Public Sector and Private Sector IT professionals on Innovative Work Behavior. The results revealed that there is no significant differences in Innovative Work Behavior between Public and Private Sector IT professionals with low mean scores for private sector as compared to public sector.

Table 12*Experience related differences on Self-leadership (N=300)*

Variable	Experience up to 10 years (n=222)		Experience 11 to 20 years (n=69)		Experience 21 years and above (n=9)		F	P
	M	SD	M	SD	M	SD		
	Self-leadership	30.09	6.44	28.94	6.67	26.33		

Table 12 shows that there is no significant differences between three different groups of IT professionals with reference to their total work experience, however the mean scores (30.09) is relatively high for those having working experience of up to 10 years.

Table 13*Experience related differences on Work Engagement (N=300)*

Variable	Experience up to 10 years (n=222)		Experience 11 to 20 years (n=69)		Experience 21 years and above (n=9)		F	P
	M	SD	M	SD	M	SD		
	Work Engagement	83.89	11.59	86.14	12.03	94.89		

Table 13 shows that there are significant differences between three different groups of IT professionals with reference to their total work experience, and the mean scores (94.89) is relatively high for those having working experience of up to 21 years or above.

Table 14*Experience related differences on Innovative Work Behavior (N=300)*

Variable	Experience up to 10 years (n=222)		Experience 11 to 20 years (n=69)		Experience 21 years and above (n=9)		F	P
	M	SD	M	SD	M	SD		
	Innovative Work Behavior	101.06	12.60	105.26	9.73	109.22		

Table 14 shows that there are significant differences between three different groups of IT professionals with reference to their total work experience, and the mean scores (109.22) is relatively high for those having working experience of up to 21 years or above.

Table 15

Mediation Analysis of Work Engagement as a Mediator of Self Leadership and Innovative Work Behavior (N=300)

		Estimate	Std.Error	%CI		t	p
				LL	UL		
Indirect effect	SL→WE→IWB	.03	.03	.02	.11		
Direct effect	SL→IWB	.21	.10	.01	.41	2.07	.03
Total effect	SL→IWB	.24	.10	.04	.45	2.34	.02

Note. SL = Self Leadership; WE = Work Engagement; IWB = Innovative Work Behavior.

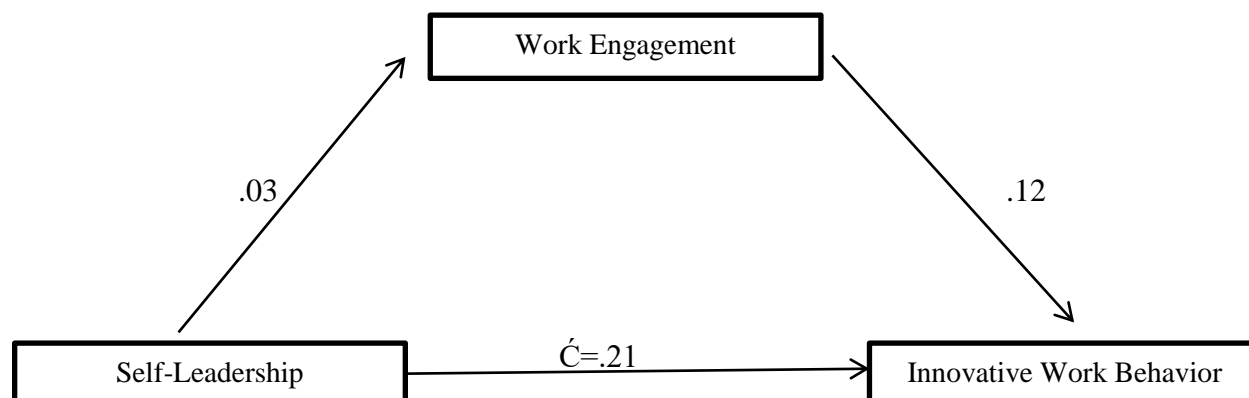


Table 15 shows the role of Work engagement as the mediator between Self-leadership and Innovative Work Behavior. Results indicate that the indirect effect of Self Leadership on Innovative Work Behavior is significantly positive as zero does not fall within the confidence interval ($B=.03$, CI, .02 to .11). The direct effect of Self Leadership on Innovative Work Behavior is significant as zero does not exist within the confidence interval ($B=.21$, $t=2.07$, $p=.03$). This shows that the relationship of Self Leadership and Innovative Work Behavior is significantly mediated by Work engagement.

Table 16

*Mediation Analysis of Vigor as a Mediator of Self-leadership and Innovative Work Behavior
(N=300)*

		Estimate	Std.Error	%CI		t	p
				LL	UL		
Indirect effect	SL→VG→IWB	.03	.03	.02	.10		
Direct effect	SL→IWB	.21	.10	.01	.41	2.10	.03
Total effect	SL→IWB	.25	.10	.04	.46	2.34	.01

Note. SL = Self Leadership; VG = Vigor; IWB = Innovative Work Behavior.

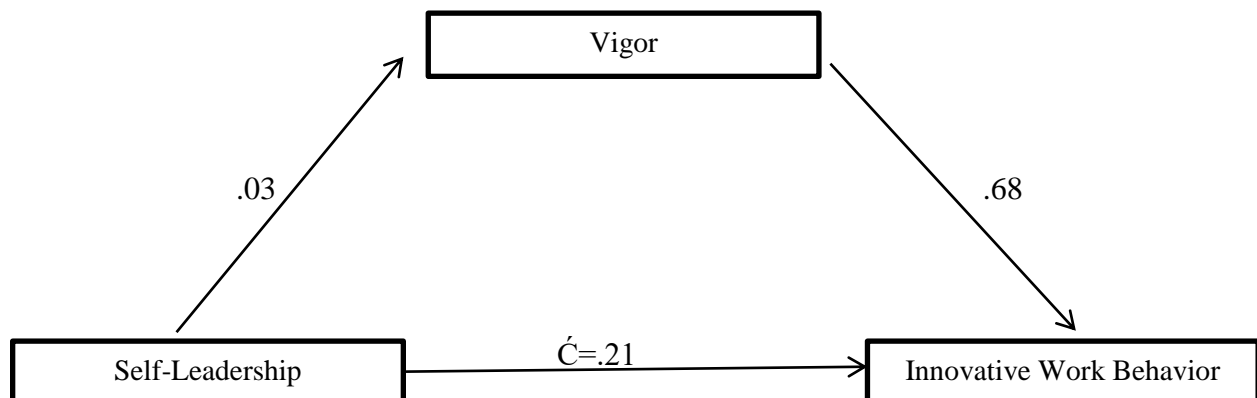


Table 16 shows the role of Vigor (one of the aspect of Work engagement) as the mediator between Self-leadership and Innovative Work Behavior. Results indicate that the indirect effect of Self-leadership on Innovative Work Behavior is significantly positive as zero does not fall within the confidence interval ($B=.03$, CI, .02 to .10). The direct effect of Self Leadership on Innovative Work Behavior is significant as zero does not exist within the confidence interval ($B=.21$, $t=2.10$, $p=.03$). This shows that the relationship of Self-leadership and Innovative Work Behavior is significantly mediated by Vigor aspect of Work engagement.

Table 17

Mediation Analysis of Dedication as a Mediator of Self Leadership and Innovative Work Behavior (N=300)

		Estimate	Std.Error	%CI		t	p
				LL	UL		
Indirect effect	SL→DD→IWB	.02	.03	.03	.08		
Direct effect	SL→IWB	.23	.10	.03	.43	2.24	.02
Total effect	SL→IWB	.25	.11	.04	.46	2.34	.02

Note. SL = Self Leadership; DD = Dedication; IWB = Innovative Work Behavior

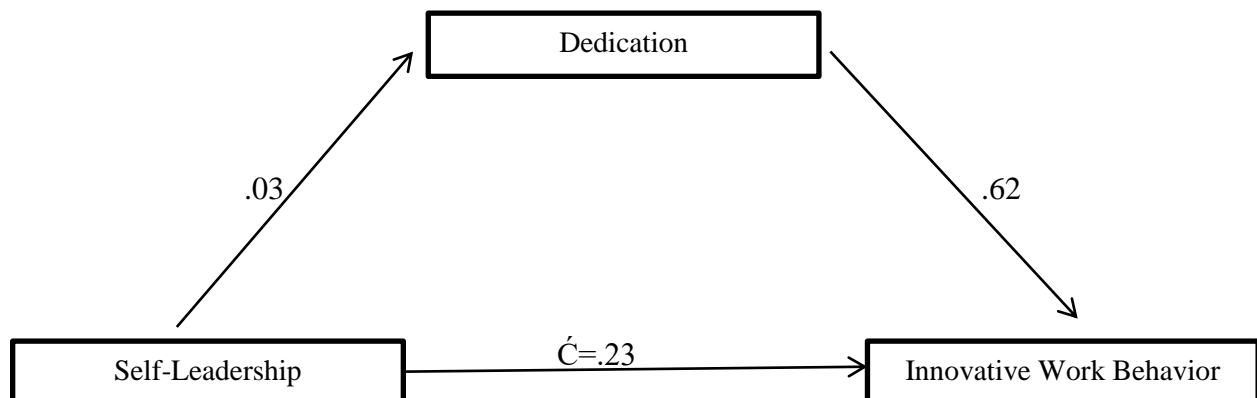


Table 17 shows the role of Dedication as the mediator between Self Leadership and Innovative Work Behavior. Results indicate that the indirect effect of Self Leadership on Innovative Work Behavior is significantly positive as zero does not fall within the confidence interval ($B=.02$, CI, .03 to .08). The direct effect of Self Leadership on Innovative Work Behavior is significant as zero does not fall within the confidence interval ($B=.23$, $t=2.24$, $p=.02$). This shows that the relationship of Self Leadership and Innovative Work Behavior is significantly mediated by Dedication aspect of Work engagement.

Table 18

Mediation Analysis of Absorption as a Mediator of Self Leadership and Innovative Work Behavior (N=300)

		Estimate	Std.Error	%CI		t	p
				LL	UL		
Indirect effect	SL→AB→IWB	.02	.02	.02	.07		
Direct effect	SL→IWB	.23	.10	.02	.44	2.20	.02
Total effect	SL→IWB	.25	.11	.04	.46	2.34	.02

Note. SL = Self Leadership; AB = Absorption; IWB = Innovative Work Behavior.

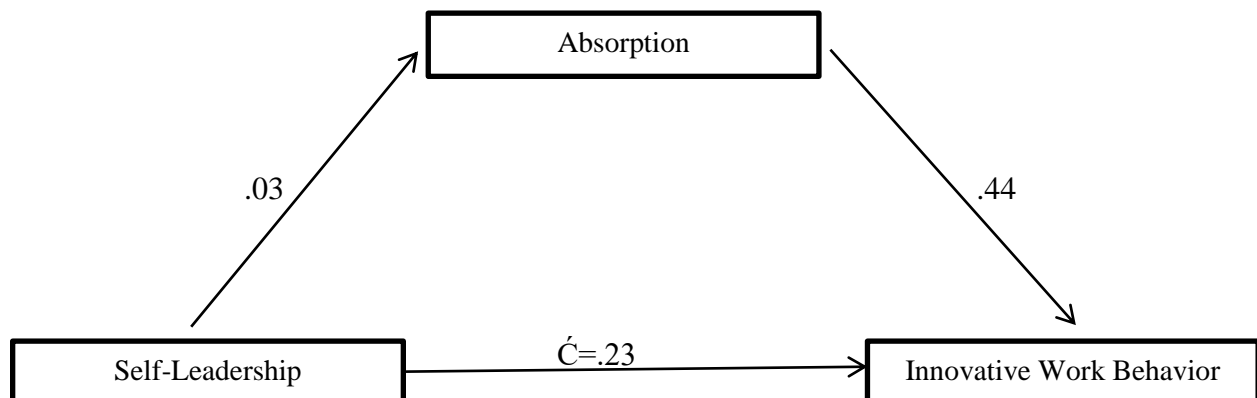


Table 18 shows the mediating role of Absorption as one aspect of Work engagement in between Self Leadership and Innovative Work Behavior. Results indicate that the indirect effect of Self Leadership on Innovative Work Behavior is significantly positive as zero does not fall within the confidence interval ($B=.02$, CI, .02 to .07). The direct effect of Self Leadership on Innovative Work Behavior is significant as zero does not exist within the confidence interval ($B=.23$, $t=2.20$, $p=.02$). The findings show that the connection of Self Leadership and Innovative Work Behavior is significantly mediated by Absorption aspect of Work engagement.

DISCUSSION

The current research was intended to investigate the association between Self Leadership, Work Engagement and Innovative Work Behavior. It also examined the role of Work engagement in the relationship between Self-Leadership and Innovative Work Behavior. Furthermore, this study explored the impact of sector and work experience on Innovative work behavior.

In the first hypothesis of the study it was anticipated that “There is a positive association between Self-Leadership and Innovative Work Behavior”. The research findings supported the hypotheses and findings indicated that Self Leadership and Innovative Work Behavior are positively and significantly correlated. Results indicated that IT professionals with high Self Leadership have high Innovative Work Behavior. Some authors claimed that the employment of the Strategies of Self Leadership, is a favorable precursor of innovation and creativeness (DiLillo and Houghton, 2006; Neck and Houghton, 2006). When workers are capable of inspiring themselves to greater degrees of productivity and performance (Manz, 1986), making decisions, describing and resolving glitches, and classifying opportunities and difficulties all serve as facilitators for creativeness (Pearce and Manz, 2005), which in turn promotes innovation (Hammond et al., 2011). An emergent amount of research has recently demonstrated that Self Leadership positively impacted on individuals' IWB (Carmeli et al., 2006; Pratoom and Savatsomboon, 2010; Kalyar et al., 2011; DiLiello and Houghton, 2006, Curren and Marques-Quinteiro, 2009).

The second hypothesis of the study anticipated that Self-leadership would have a positive impact on Work Engagement. The study findings revealed that Self Leadership and Work Engagement are positively but non-significantly correlated. Several studies (e.g., Amundsen & Martinsen, 2015; Zeijen, Peeters, & Hakanen, 2018; Breevaart et al., 2014) have observed that Self Leadership and Work Engagement are positively correlated, whichever by improving job resources (Breevaart et al., 2014) or by utilizing psychological resources such as psychological empowerment (Amundsen & Martinsen, 2015). The degree to which people put their "full

selves" into the accomplishment of their work serves as the basis for Christian, Garza, and Slaughter's (2011) explanation of this positive relationship.

In the third hypothesis of the study it was anticipated that there is a positive association between Work Engagement and Innovative Work Behavior. This hypothesis was substantiated as Work engagement had a significant and positive impact on Innovative Work Behavior. The findings of the present study show that IT professionals with high engagement with their work will lead to the high degree of Innovative Work Behavior. Bakker and Xanthopoulou (2013), claimed that employees that experience psychologically good affect have "a varied set of thought," which allows them to understand issues more holistically and broadly, eventually leading to resolutions that had not previously occurred to them. This proposes that positively affecting on work supports develop Problem-Solving and innovative work behavior amongst workforces. Furthermore, it is shown that when workers are emotionally and motivationally fulfilled at work, a state known as work engagement, they consistently improve their work through creative actions (Hakanen et al., 2008).

One of the important objective of the study was to examine the mediating role of Work engagement in the relationship between Self-leadership and Innovative work behavior. The results from table 3 indicated the role of Work Engagement in Self Leadership and Innovative Work Behavior. Accordingly, the 4th assumption of the current research hypothesized that "Work Engagement mediates the relationship between Self Leadership and Innovative Work Behavior". Findings supported the hypothesis that Work Engagement is positively and significantly mediated the association between Self-Leadership and Innovative Work Behavior. The findings showed that IT professionals with greater Self Leadership have greater Work Engagement which further leads to higher Innovative Work Behavior. According to the past research study Self-leadership, work engagement, and individual innovation Studies on a personal level demonstrate that better affective responses are correlated with higher levels of Self leadership (Stewart et al., 2011).

It was further explored to find out the mediating role of the three different aspects of Work engagement i.e. Vigor, Dedication and Absorption in Self Leadership and Innovative Work Behavior relationship. This research findings indicated that Vigor is positively significantly mediated the relationship between Self Leadership and Innovative Work Behavior.

The results revealed that IT professionals with high Self Leadership have high Vigor which ultimately results in high Innovative Work Behavior.

The findings from table 5 indicated the role of Dedication aspect of Work engagement in Self Leadership and Innovative Work Behavior. The findings showed that Dedication positively significantly mediated the association between Self Leadership and Innovative Work Behavior. The results revealed that IT professionals with greater Self Leadership have high Dedication which ultimately results in high Innovative Work Behavior.

The findings from table 6 indicated the mediating role of Absorption aspect of Work engagement in Self Leadership and Innovative Work Behavior. The results revealed that Dedication is significantly positively mediated the relation between Self Leadership and Innovative Work Behavior. The results indicated that IT professionals with high Self Leadership have high Absorption which ultimately results in high Innovative Work Behavior.

The present study also explored the mean differences on Self-leadership across sector (public vs. private) and work experience. The results revealed that there were significant differences in Self-leadership between Public and Private Sector IT professionals with high mean scores for private sector as compared to public sector. One-way ANOVA was carried out in order to compute the mean differences for participants total work experience. There were no significant differences on Self-leadership between three different groups of IT professionals with reference to their total work experience. However, the mean scores on Self-leadership were relatively high for those having total working experience of up to 10 years.

The study also explored the mean differences on Work Engagement across sector (public vs. private) and work experience. The results revealed that there were no significant differences in Work Engagement between Public and Private Sector IT professionals with low mean scores for private sector as compared to public sector. One-way ANOVA was carried out in order to compute the mean differences for participants total work experience. There were significant differences on Work Engagement between three different groups of IT professionals with reference to their total work experience. However, the mean scores on Work Engagement were relatively high for those having total working experience of up to 21 years or above.

The study also explored the mean differences on Innovative Work Behavior across sector (public vs. private) and work experience. The results revealed that there were no significant differences in Innovative Work Behavior between Public and Private Sector IT professionals with low mean scores for private sector as compared to public sector. One-way ANOVA was carried out in order to compute the mean differences for participants total work experience. There were significant differences on Innovative Work Behavior between three different groups of IT professionals with reference to their total work experience. However, the mean scores on Innovative Work Behavior were relatively high for those having total working experience of up to 21 years or above.

Conclusion

The purpose of the study was twofold: determining the impact of Self-leadership and Work engagement on Innovative work behavior of IT professionals and investigating the mediating role of Work engagement in fostering the relationship between Self-leadership and Innovative work behavior. From the preceding discussion it is evident that Self-leadership is positively associated with Work engagement and Innovative work behavior which is in line with the previous research contending similar impact. The current research provides support for the Work engagement based mediating model of Innovative work behavior. The results showed that Work engagement and its three dimensions mediate the relationship between Self-leadership and Innovative work behavior.

Limitations and Suggestions

Apart from the usefulness of this research it is important to acknowledge the limitations of this study as well. The cross-sectional design of the study is one of the main limitation. The data was collected only from Khyber Pakhtoonkhwa, Pakistan and the findings of the study may not be generalizable to other organizational settings in other provinces. A detailed investigation of geographic variations might be conducted by comparing data from several cities and provinces, resulting in a better understanding of the research issue. One of the limitation is that Self-leadership in this study have been taken as unidimensional rather than multidimensional, by using the abbreviated version of Self Leadership Questionnaire, i.e. this investigation involves study of overall Self-leadership. Future studies in this field can address this issue by examining

the facets of Self-leadership which may produce better understanding of the effects of Self-leadership and work-related attitudes.

Implications of the study

This research has both theoretical and practical implications. From theoretical perspective, this study makes a significant contribution to the existing body of knowledge in the field of Self-leadership and Innovative work behavior especially in the local organizational context. Findings of the study also serve as a first step in exploring Self-leadership and Innovative work behavior in our local organizations. It provides an initial understanding and can pave the way for further investigation in this area. In terms of applied significance, the study suggests that the organizational leaders and managers should become aware of the role of Self-leadership in creating an environment that is conducive for Innovative work behavior among organizational members.

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APPENDICES A



DEPARTMENT OF APPLIED PSYCHOLOGY
NATIONAL UNIVERSITY OF MODERN LANGUAGES

This questionnaire is a part of the research work being carried out as an essential requirement of my M.Phil. Degree at Department of Applied Psychology, National University of Modern Languages. The purpose of this research is to study the leadership aspects and its relationship with work engagement and innovative work behaviour. The information provided by you will be used only for research purposes. I will be very thankful to you for your kind cooperation in this regard.

Mr. Waqas Ahmad

M.Phil. Scholar, NUML

Email: waqaspsychology@gmail.com

Please provide the following information

1. Name (optional):
2. Position/Designation:
3. Gender:
4. Age:
5. Education:
6. Total experience:
7. Experience in this organization:
8. Status of the organization (public/private):
9. Your Email address:

APPENDICIES B

Read each of the following statements carefully and try to decide **how true the statement is in describing you**. Put a (✓) in the box **that best describes you**. There is **no right or wrong answer**. Please don't leave any statement blank.

	Statements	Not at all accurate	Somewhat accurate	A little accurat e	Mostly accurate	Completely accurate
1	I establish specific goals for my own preference.					
2	When I have successfully completed a task, I often reward myself with something I like.					
3	I think about my own beliefs and assumptions whenever I encounter a difficult situation.					
4	I make a point to keep track of how well I'm doing at work.					
5	I visualize myself successfully performing a task before I do it.					
6	Sometimes I talk to myself (out loud or in my head) to work through difficult situations.					
7	I try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with.					
8	Sometimes I picture in my mind a successful performance before I actually do a task.					
9	I work toward specific goals I have set for myself.					

APPENDICES C

*The following statements are about **how you feel at work**. Please read each statement carefully and **decide according to the given scale**, if you ever feel this way about your job. There is **no right or wrong answer**. Please don't leave any statement blank.*

Never	Almost never	Rarely	Sometimes	Often	Very often	Always
1	2	3	4	5	6	7

1. _____ At my work, I feel bursting with energy.
2. _____ I find the work that I do full of meaning and purpose.
3. _____ Time flies when I'm working.
4. _____ At my job, I feel strong and vigorous.
5. _____ I am enthusiastic about my job.
6. _____ When I am working, I forget everything else around me.
7. _____ My job inspires me.
8. _____ When I get up in the morning, I feel like going to work.
9. _____ I feel happy when I am working intensely.
10. _____ I am proud of the work that I do.
11. _____ I am immersed in my work.
12. _____ I can continue working for very long periods at a time.
13. _____ To me, my job is challenging.
14. _____ I get carried away when I'm working.
15. _____ At my job, I am very resilient, mentally.
16. _____ It is difficult to detach myself from my job.
17. _____ At my work I always persevere, even when things do not go well.

APPENDICES D

INSTRUCTIONS

Please encircle the extent to which you agree with the following statements; there is no concept of right and wrong, your responses will only indicate the extent to which you agree or disagree with the statement.

To a very little extent = 1

To a little extent = 2

To some extent = 3

To a great extent = 4

To a very great extent = 5

S. No	STATEMENT	RATINGS
1	I successfully coordinate with administrative staff to support my new ideas.	1 2 3 4 5
2	I try to use available resources to explore new ideas in advance before the need arise.	1 2 3 4 5
3	I encourage formalization in implementation of new ideas and behaviors.	1 2 3 4 5
4	I realize ideas within my job nature with persistence.	1 2 3 4 5
5	I generate ideas to improve or redesign services/activities that my department provides.	1 2 3 4 5
6	I suggest new ways of communication within my department.	1 2 3 4 5
7	I carry out new experiments within my work.	1 2 3 4 5
8	I feel concern for my work related issues.	1 2 3 4 5
9	I systematically introduce innovative ideas in my work environment.	1 2 3 4 5
10	I mobilize support for my new ideas.	1 2 3 4 5
11	I intentionally attempt to maximize organizational profits from the application of new ideas.	1 2 3 4 5
12	I collaborate with my colleagues to transform new ideas that they	1 2 3 4 5

	become practicable.	
13	I actively think about improvement concerning my colleague's work.	1 2 3 4 5
14	I generate new solutions to the old problems.	1 2 3 4 5
15	I independently sort out and install new computer applications into my work situation.	1 2 3 4 5
16	I feel concern for my work related tasks.	1 2 3 4 5
17	I try to create situation to introduce and elaborate changes in different department of organization.	1 2 3 4 5
18	I encourage novel ideas with minute details in order to increase its amount of diversity	1 2 3 4 5
19	I make important company/organization members enthusiastic for my innovative ideas.	1 2 3 4 5
20	I minimize difficulties in process of idea implementation.	1 2 3 4 5
21	I generate ideas on how to optimize knowledge and skills within my work.	1 2 3 4 5
22	I mobilize support from colleagues for my new ideas and solutions.	1 2 3 4 5
23	I activity engage in gathering information to identify deviations from rules and regulations within my department.	1 2 3 4 5
24	I think that new ideas facilitate new learning.	1 2 3 4 5
25	I emphasize on enforceability of work rules and procedures.	1 2 3 4 5
26	I do professional activities to bring innovative ideas from outside the organization.	1 2 3 4 5
27	I try to make my novel ideas as a significant contributing factor in organizational effectiveness.	1 2 3 4 5
28	I discuss matters with colleagues concerning my work.	1 2 3 4 5